



AMR a humán egészségügyben

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30. DERZSY NAPOK

2024. június 13-14. Zalakaros

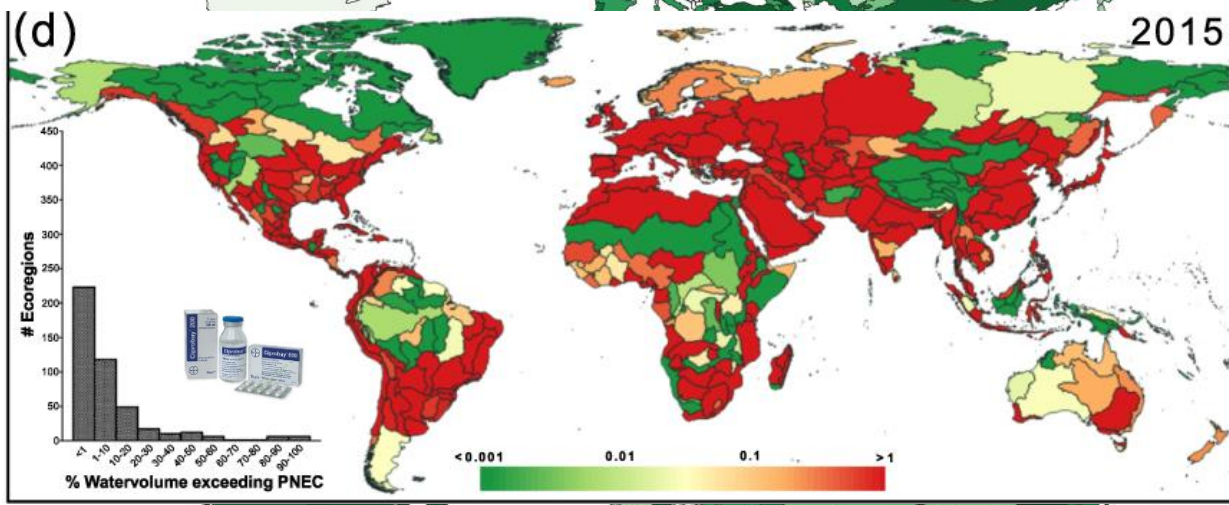
DALYs per 100 000 population



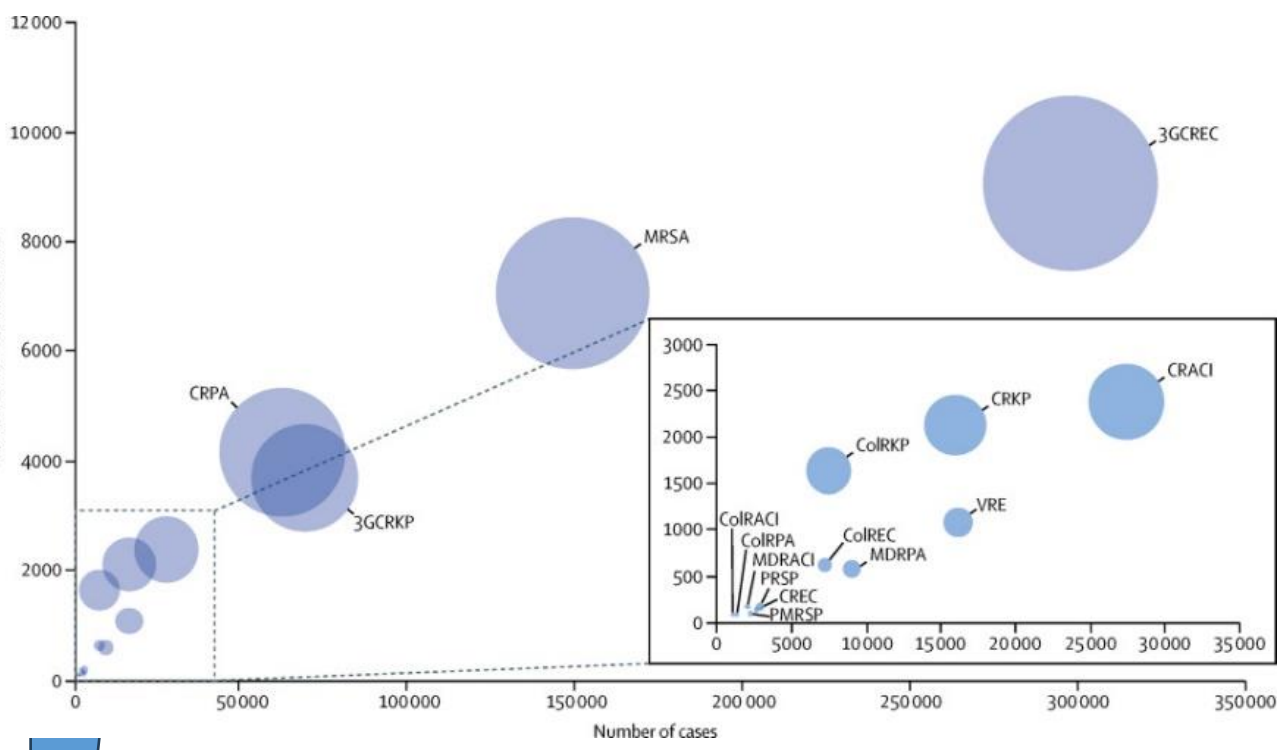
A



(d)



Number of attributable deaths



Antibiotic consumption



Surveillance



European Centre for Disease Prevention and Control

Latest surveillance data on antimicrobial consumption

https://qap.ecdc.europa.eu/public/extensions/AMC2_Dashboard/AMC2_Dashboard.html#eu-consumption-tab

Current selections ▾ Undo selections Redo selections Reset selections [Help](#)

EU/EEA overview ▾

National overview ▾

Enhanced antimicrobial consumption surveillance ▾

Data sources ▾

Enhanced antimicrobial consumption surveillance > WHO AWaRe classification

Filters for WHO AWaRe classification ▾

2022 ▾

Total care (community and hospital) sector ▾



Surveillance Atlas of Infectious Diseases

<https://atlas.ecdc.europa.eu/public/index.aspx?Dataset=27&HealthTopic=4>

Antimicrobial resistance ▾

Klebsiella pneumoniae ▾

Carbapenems ▾

R - resistant isolates, percentage ▾



2022 ▾

Region	R - resistant isolates, percentage (%)
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Austria

0.9

Belgium

1.4

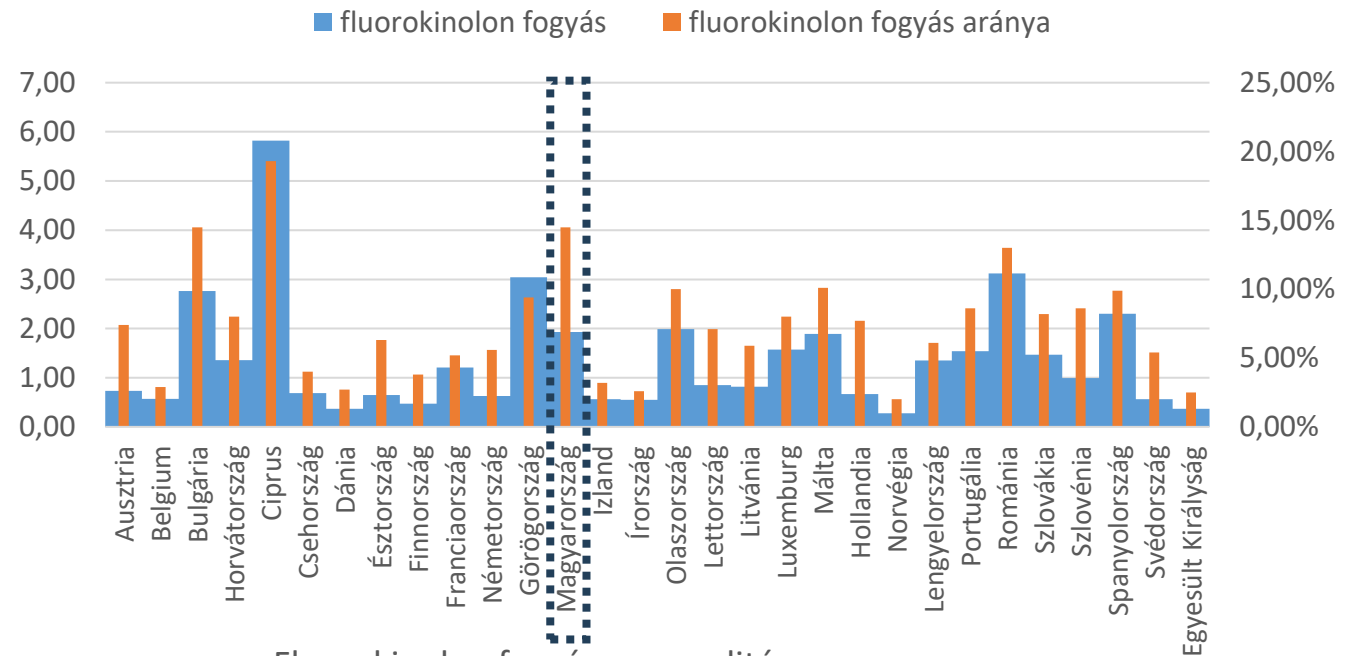
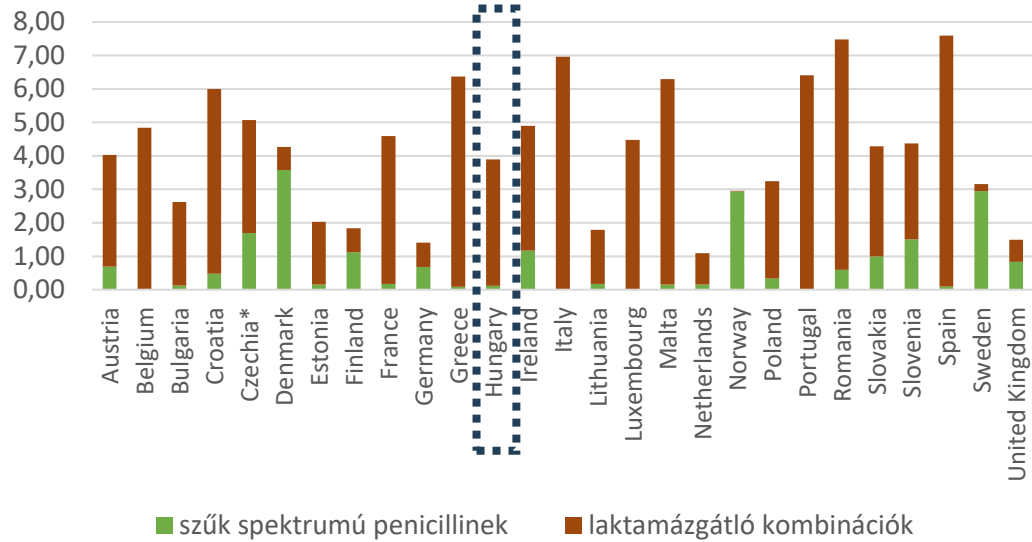


R - resistant isolates, percentage (%)

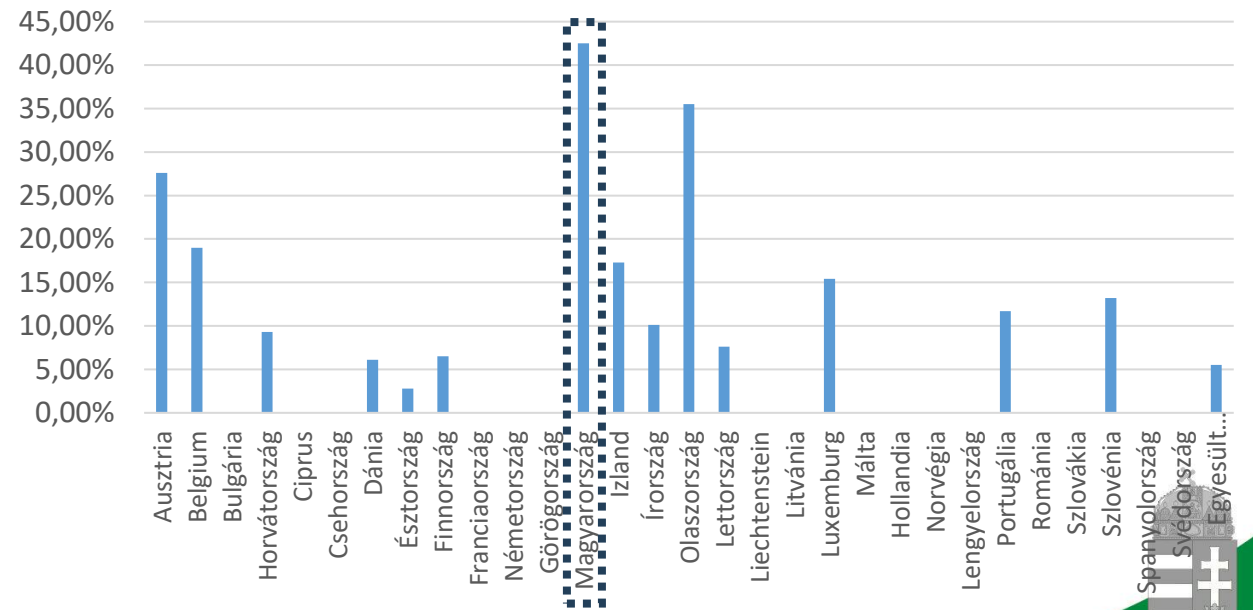
<1%

1-<5%

A járóbeteg antibiotikum felhasználás minőségi indikátorai kedvezőtlenek



Fluorokinolon fogyasztás szezonálisitása



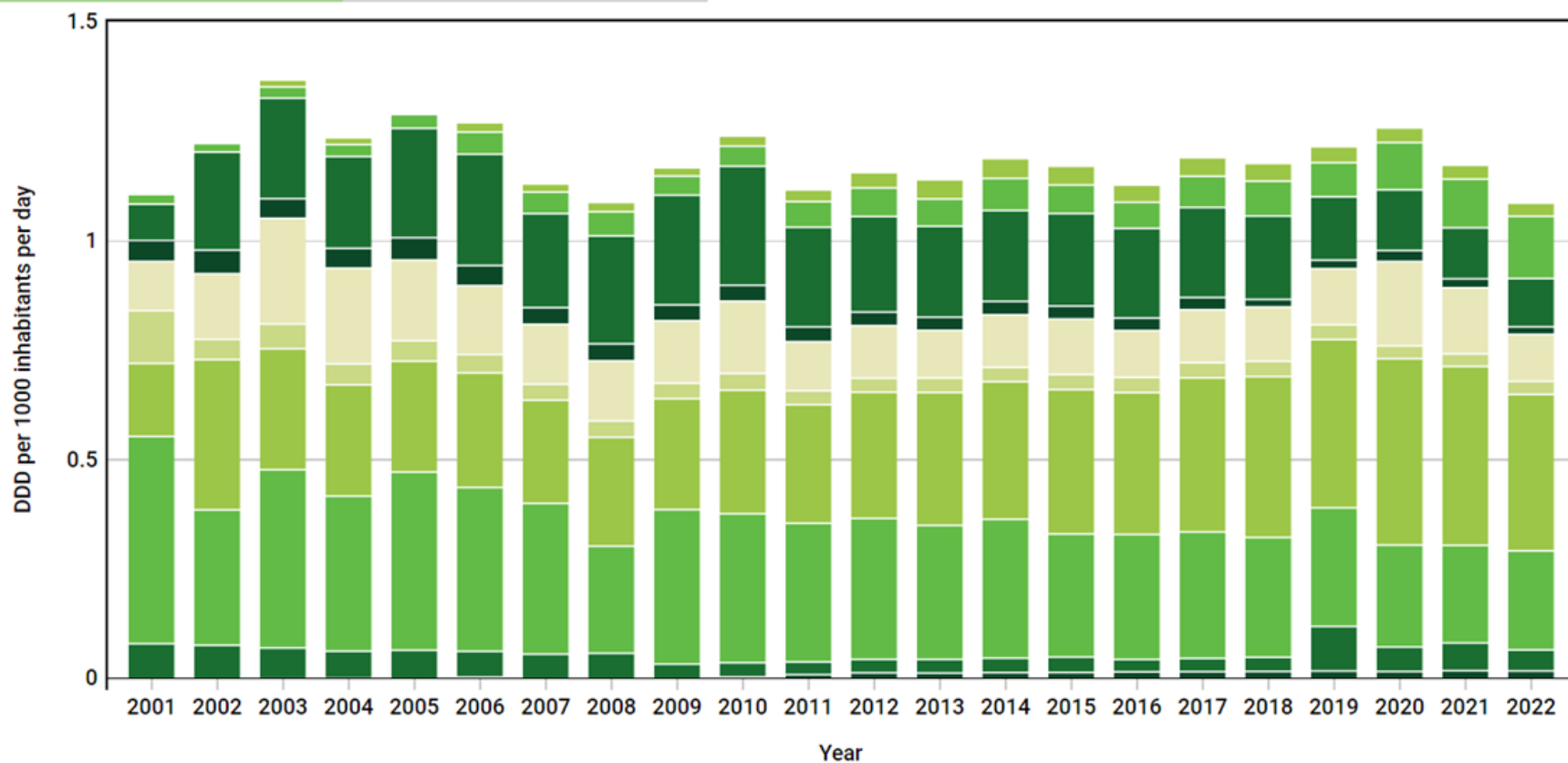
és a fekvőbetegé is

Trend of the ATC group J01, A07A and P01A consumption in the hospital sector (expressed as DDD per 1000 inhabitants per day)

Hungary, 1991-2022

Chart view

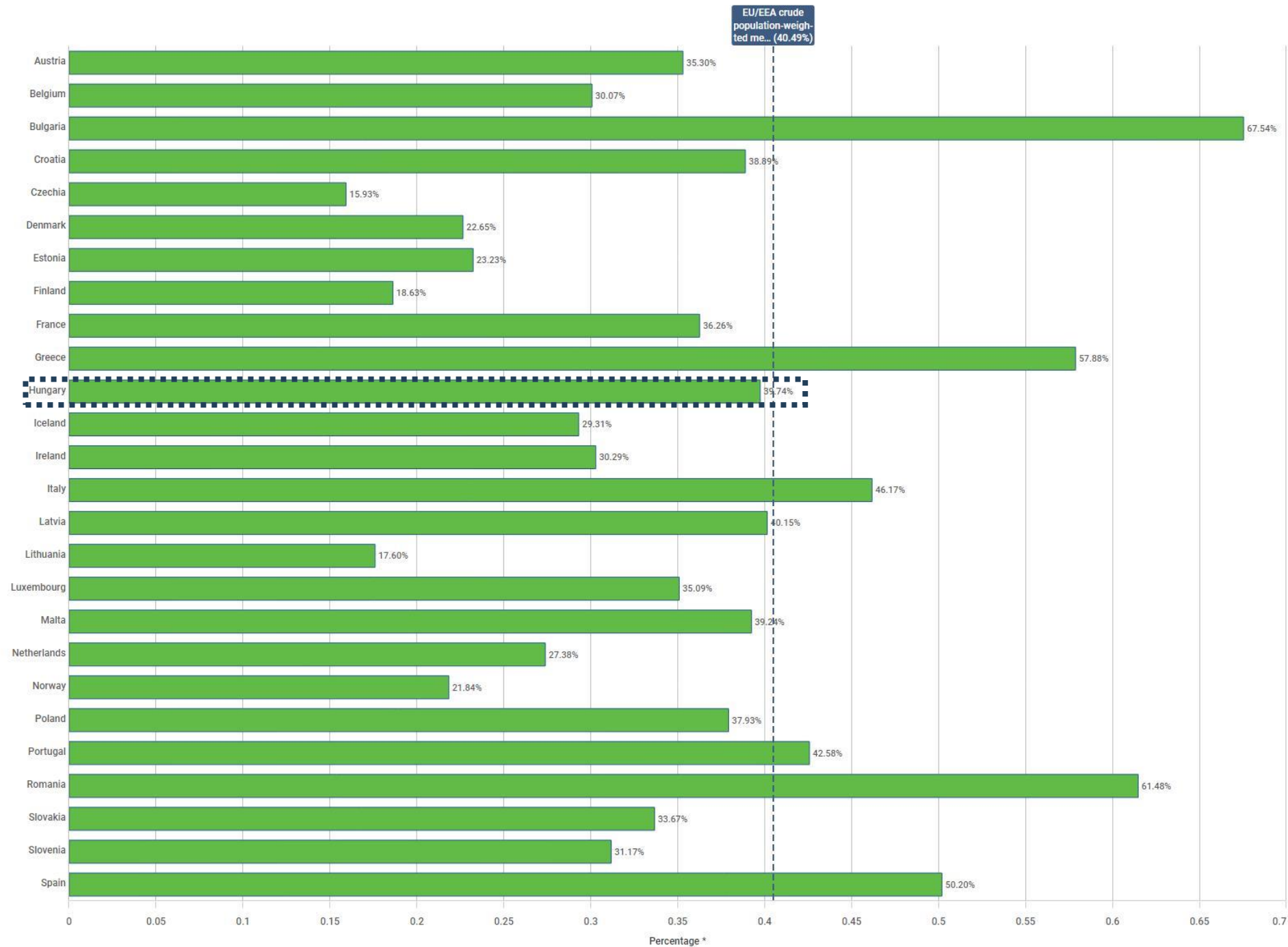
Data view



Export

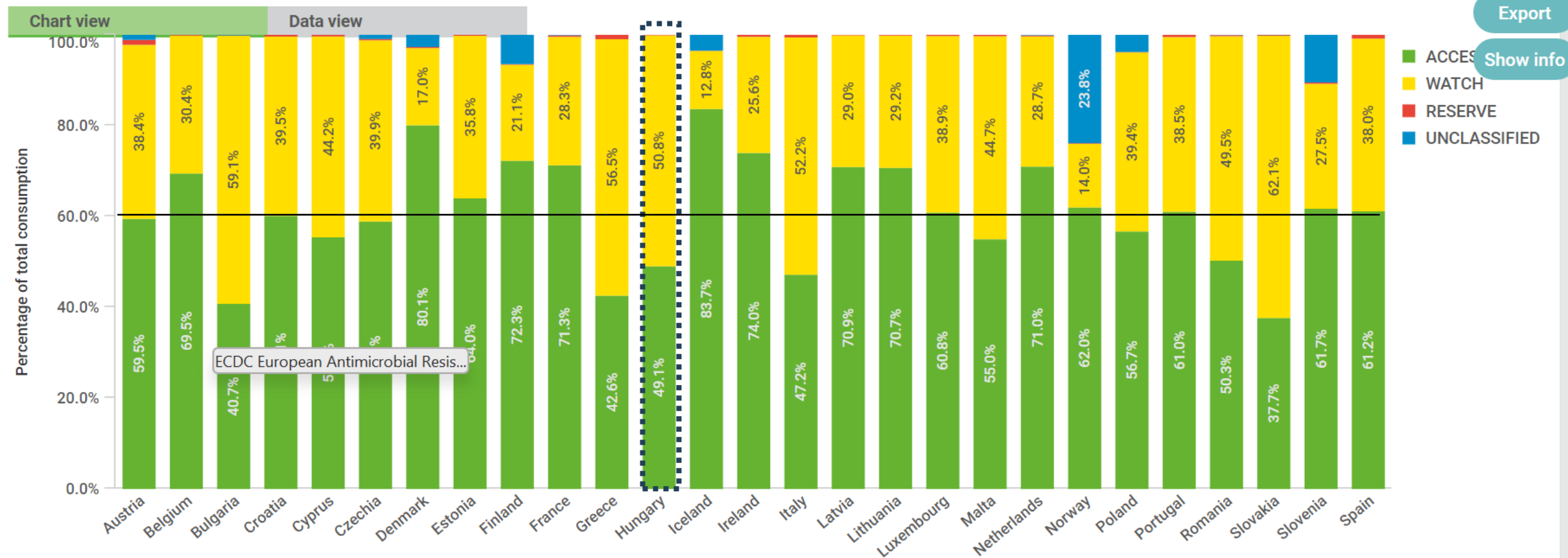
Show info

- A07A - Intestinal antiinfectives
- J01A - Tetracyclines
- J01B - Amphenicols
- J01C - Beta-lactam antibacterials, penicillins
- J01D - Other beta-lactam antibacterials
- J01E - Sulfonamides and trimethoprim
- J01F - Macrolides, lincosamides and streptogramins
- J01G - Aminoglycoside antibacterials
- J01M - Quinolone antibacterials
- J01R - Combinations of antibacterials
- J01X - Other antibacterials
- P01A - Agents against amoebiasis and other protozoa



Patterns of consumption of antibacterials according to the AWaRe classification of antimicrobial agents, EU/EEA countries, 2022

AWaRe: Access, Watch, and Reserve WHO classification of antimicrobials. EU target: Access agents should constitute at least 65% of total consumption



Export
Show info

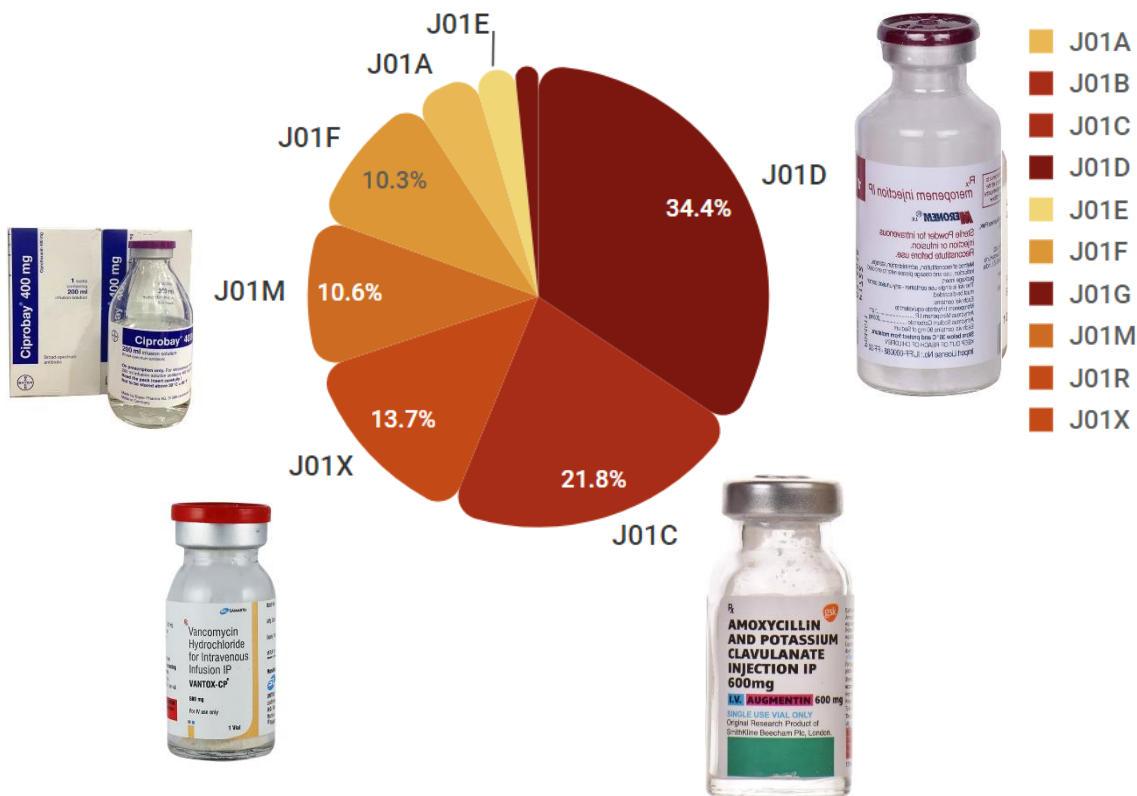
- ACCESS
- WATCH
- RESERVE
- UNCLASSIFIED



Az antibiotikum fogyasztás mintázata

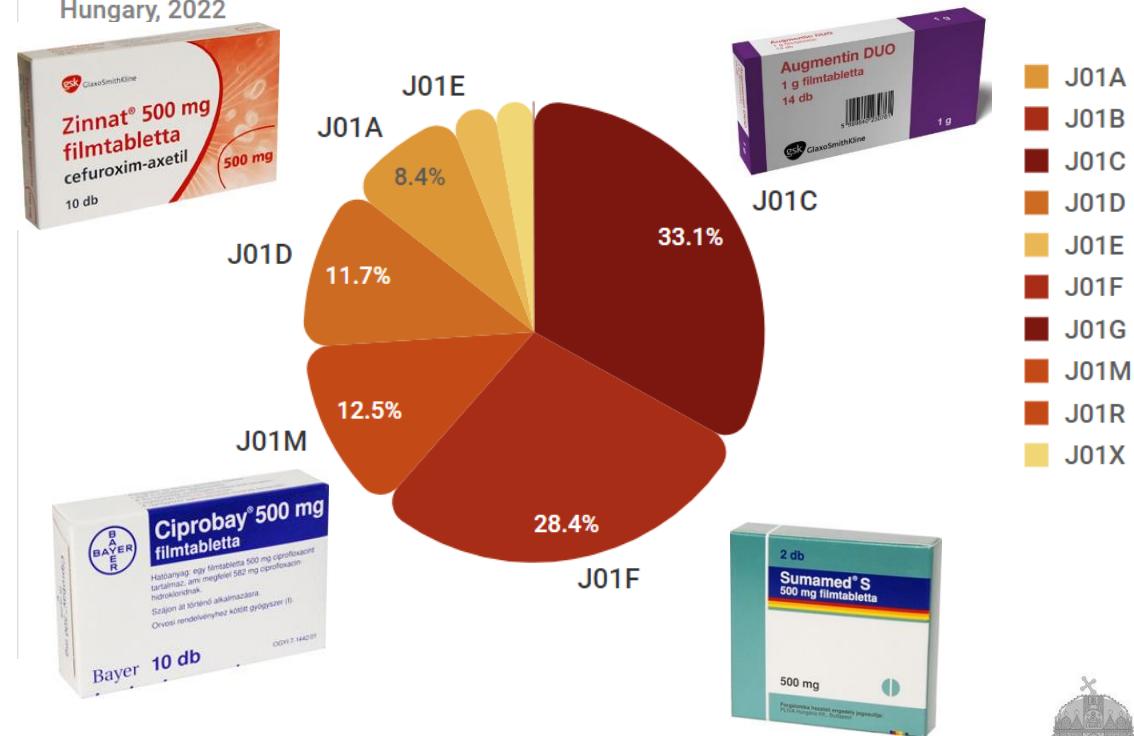
Distribution of ATC group J01 in the hospital sector (expressed as DDD per 1000 inhabitants per day)

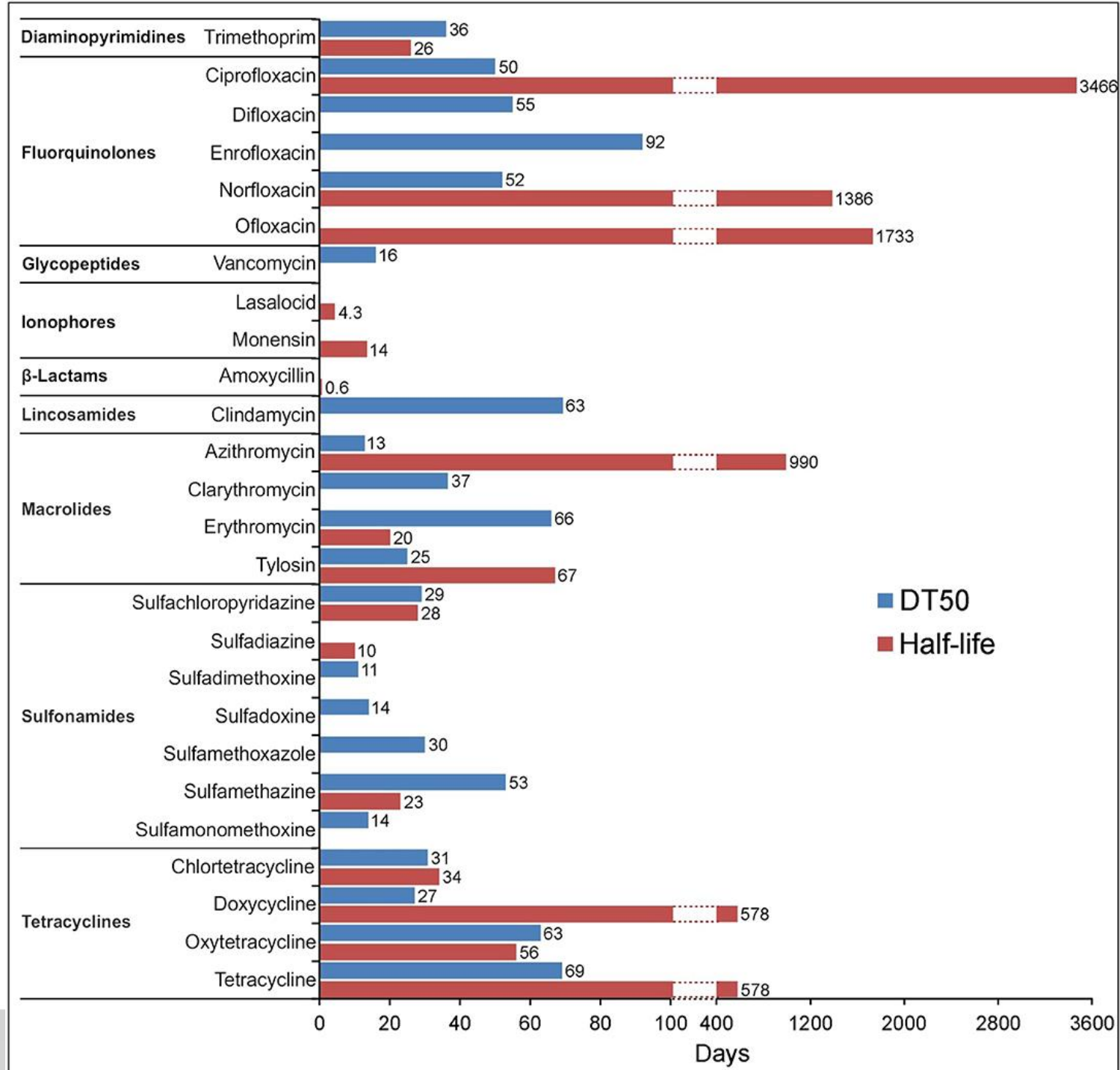
Hungary, 2022



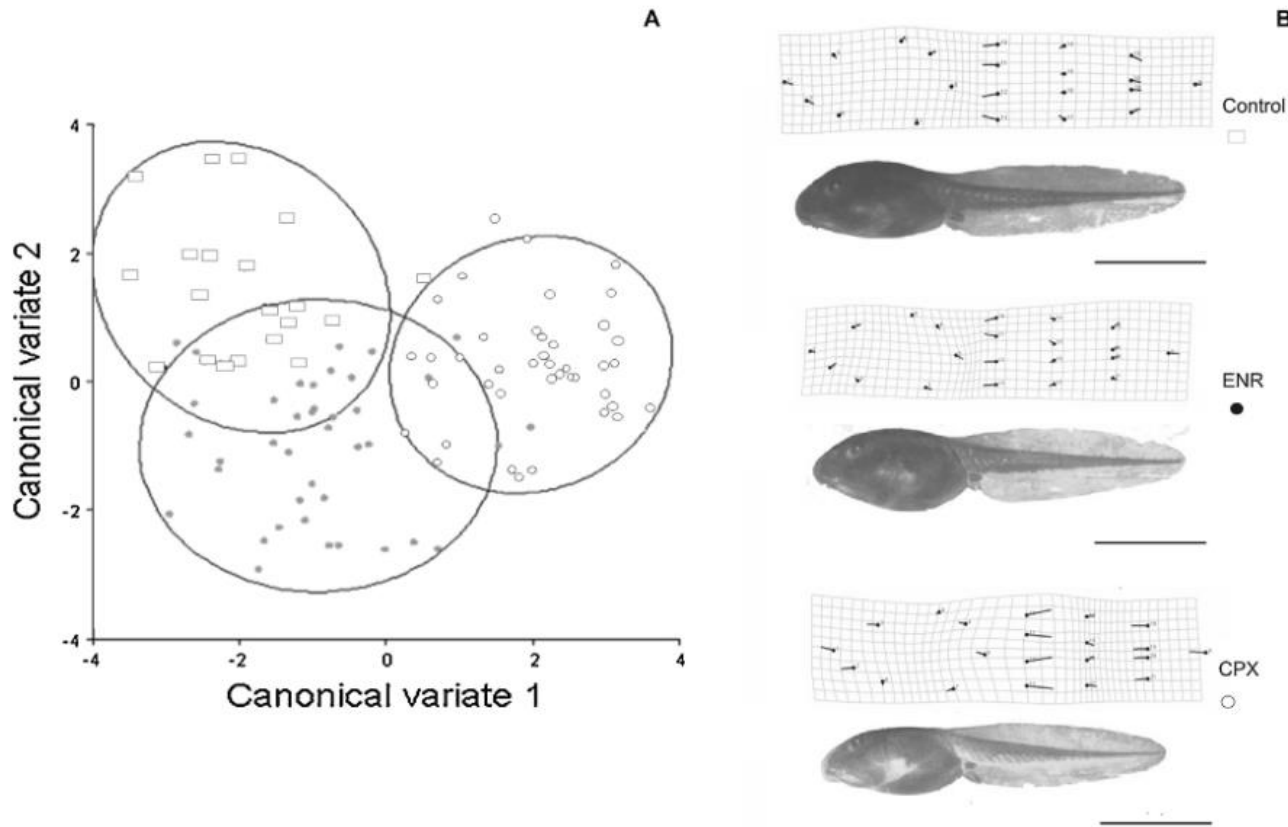
Distribution of ATC group J01 in the community (primary care) sector (expressed as DDD per 1000 inhabitants per day)

Hungary, 2022

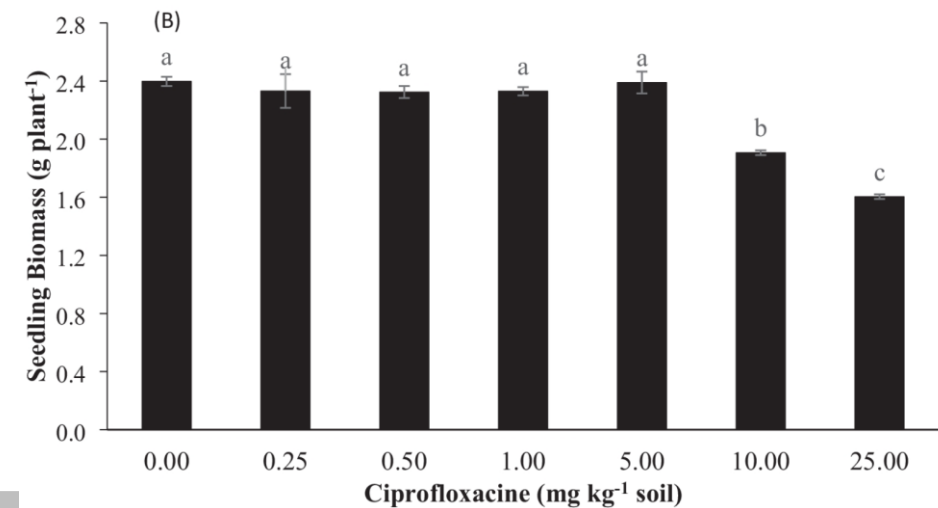




Ökotoxikológiai hatások



Peltzer et al. Environ Toxicol Pharmacol. 2017 51:114-123.



Khan et al. J Soil Sci Plant Nutr 2022 22, 3788–3797

CRITICAL PRIORITY



Acinetobacter baumannii
carbapenem-resistant



Pseudomonas aeruginosa
carbapenem-resistant



Enterobacteriaceae
carbapenem-resistant,
3rd gen. cephalosporin-resistant

HIGH PRIORITY



Enterococcus faecium
vancomycin-resistant



Staphylococcus aureus
vancomycin-resistant
methicillin-resistant



Helicobacter pylori
clarithromycin-resistant



***Campylobacter*
species**
fluoroquinolone-resistant



***Salmonella* species**
fluoroquinolone-resistant



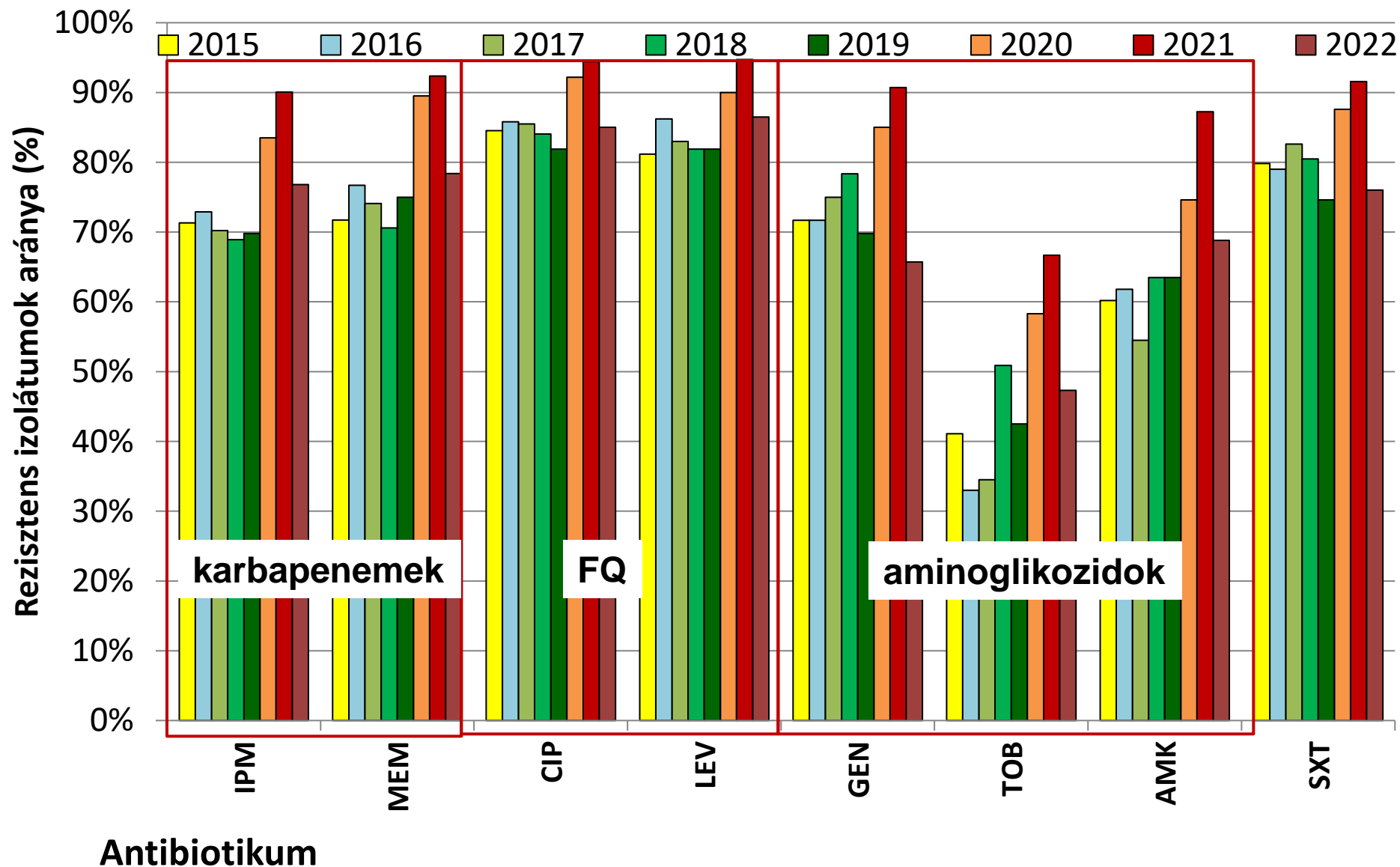
Neisseria gonorrhoeae
3rd gen. cephalosporin-resistant,
fluoroquinolone-resistant

„ESCAPE” kórokozók

- *Enterococcus faecium*
- *Staphylococcus aureus*
- *Clostridioides difficile*
- *Acinetobacter baumannii*
- *Pseudomonas aeruginosa*
- *Enterobacteriaceae (Enterobacterales)*



Hemokultúrából izolált *Acinetobacter baumannii*, NBS, 2015-2022



**Colistin R:
2022: 2,5%**



R - resistant isolates, percentage (%)

- <1%
- 1-<5%
- 5-<10%
- 10-<25%
- 25-<50%
- 50-<75%
- >=75%

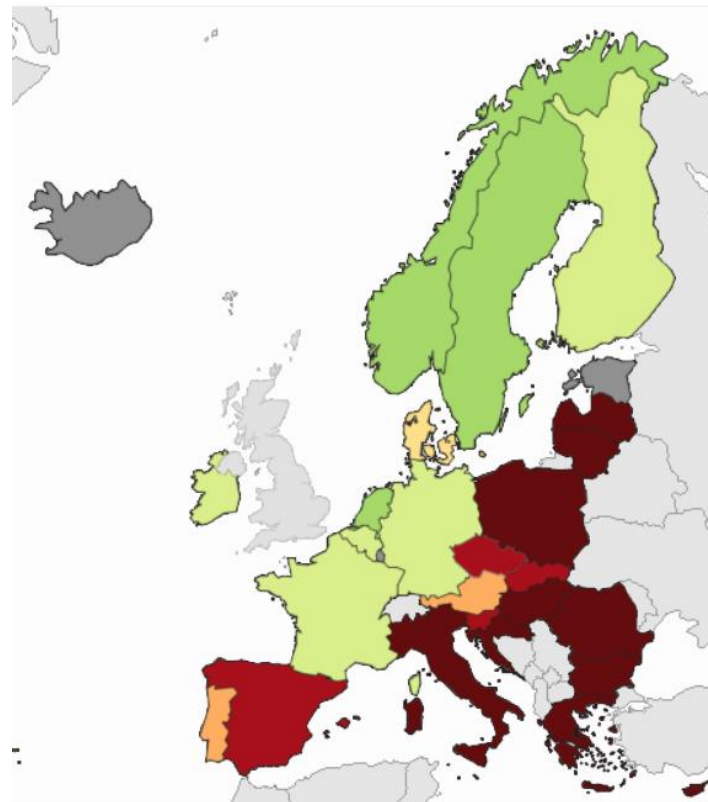
Multirezisztens *Acinetobacter* spp., EARS-Net



2019

EU/EGT, 2019: 33,6%

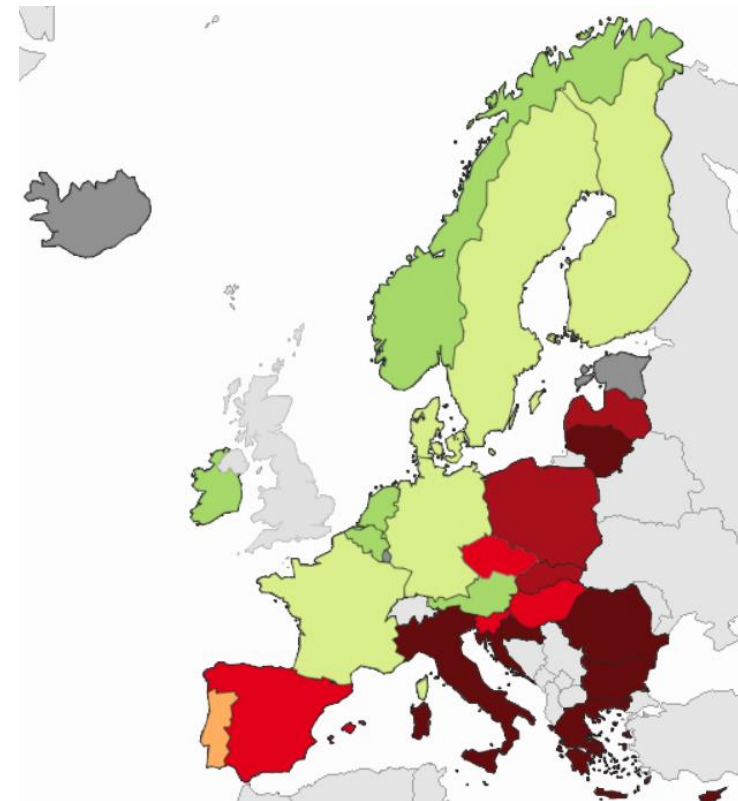
HU, 2019: 45,6%



2021

EU/EGT, 2021: 36,8%

HU, 2021: 80,1%



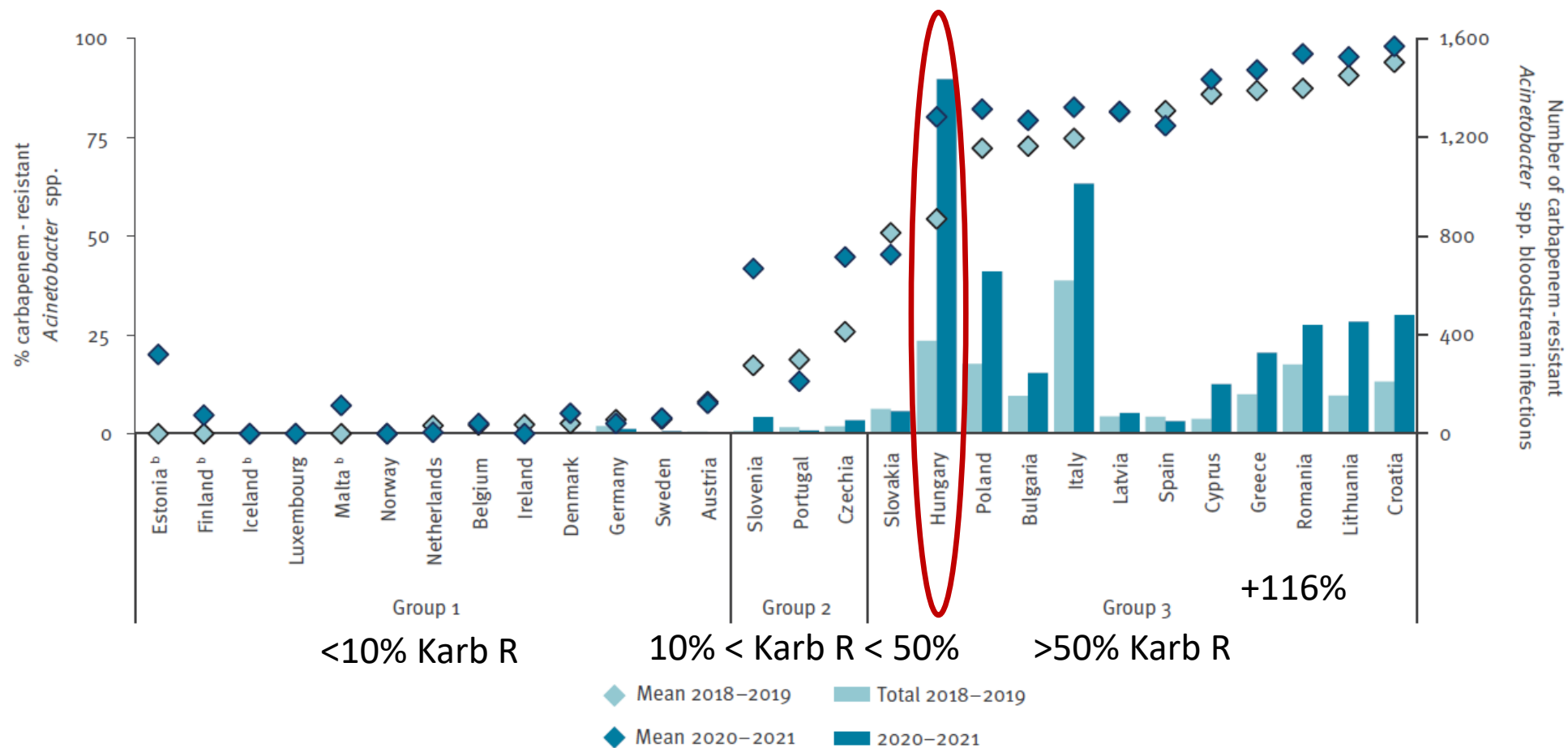
2022

EU/EGT, 2022: 31,8%

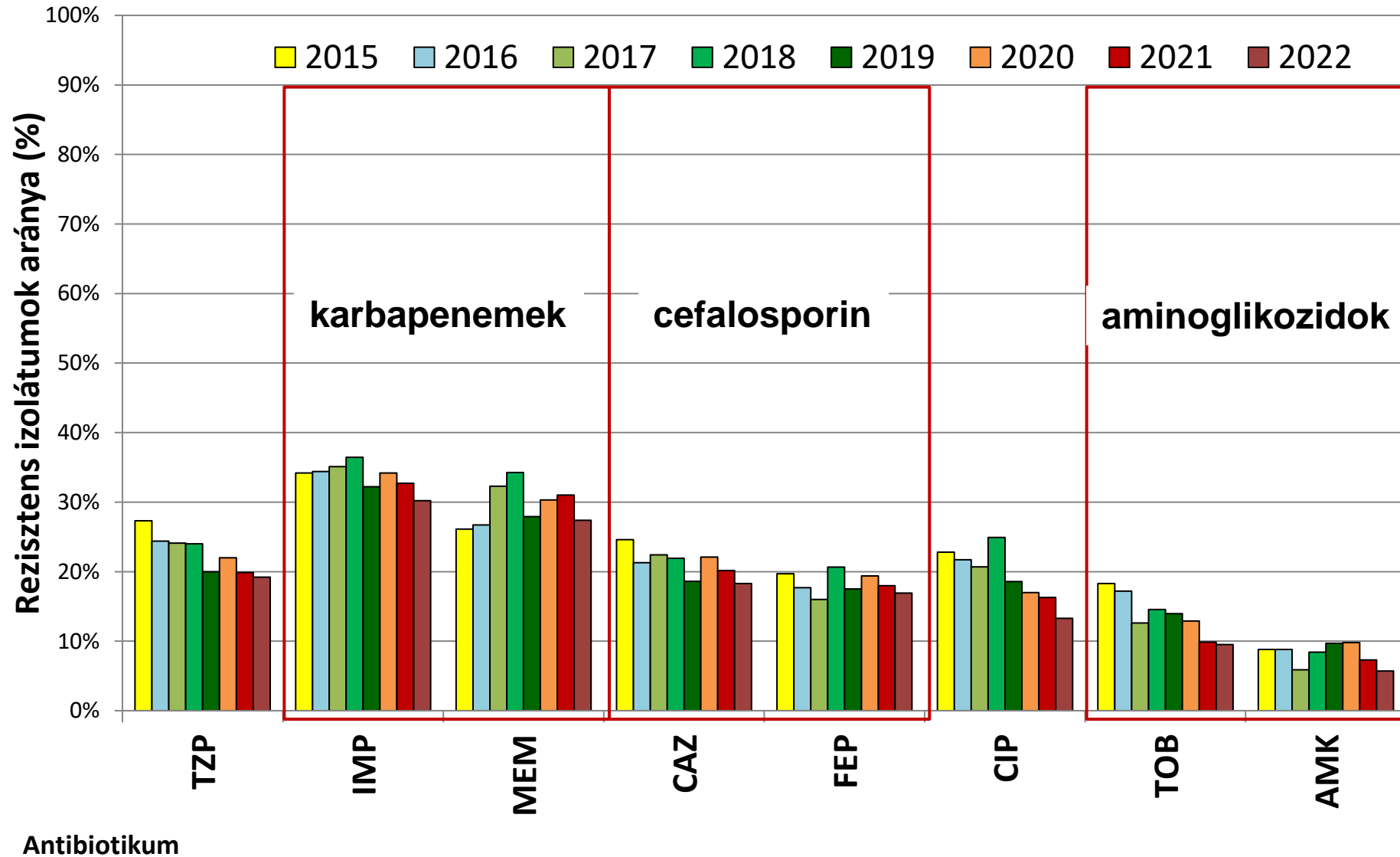
HU, 2022: 44,3%



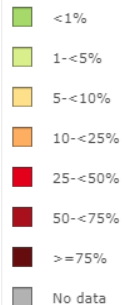
Karbapenem rezisztencia aránya és karbapenem rezisztens *Acinetobacter* spp. száma az EARS-Net adatai alapján, EU/EGT, 2018–2019 vs 2020–2021 (n = 9,542)



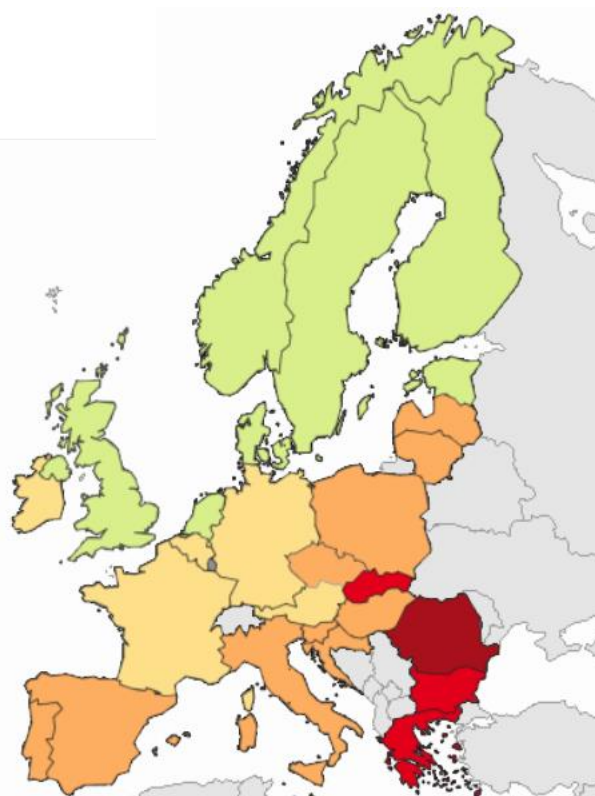
Hemokultúrából izolált *Pseudomonas aeruginosa*, NBS, 2015-2022



R - resistant isolates, percentage (%)

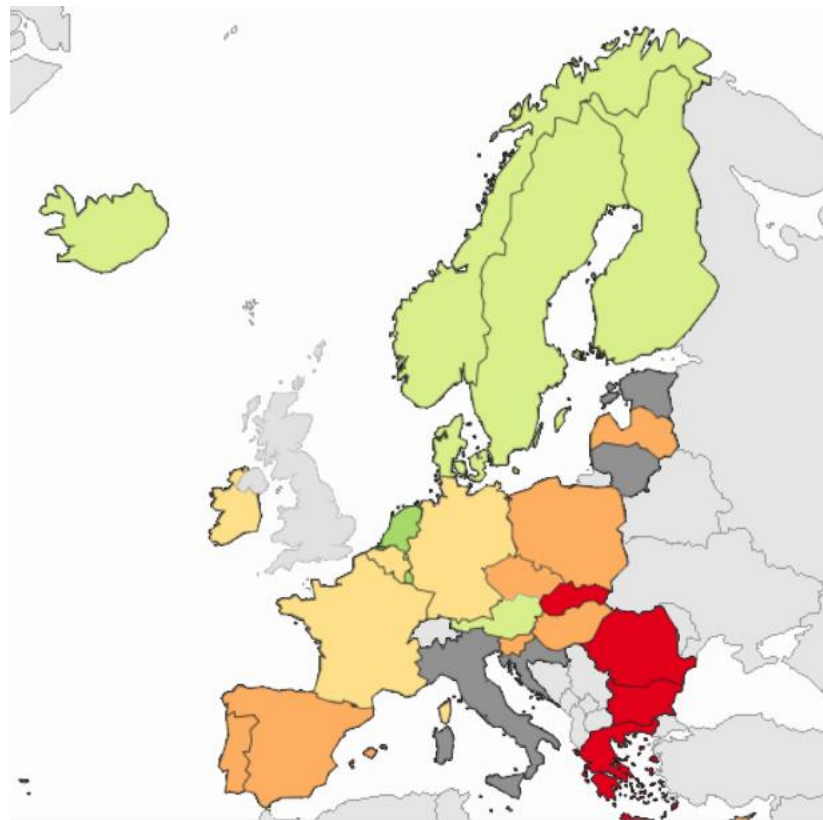


Multirezisztens *P. aeruginosa*, EARS-Net



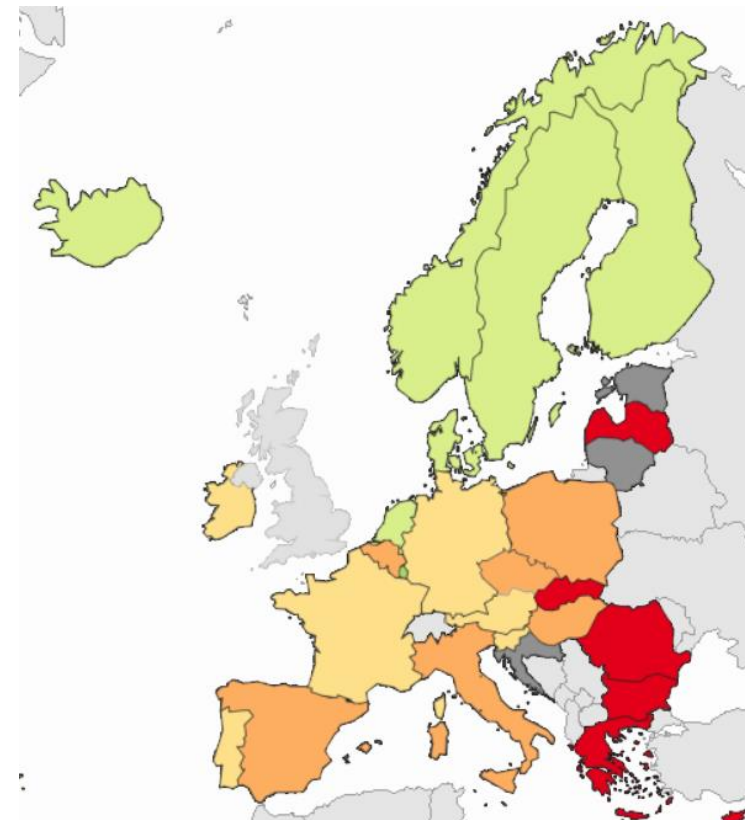
2019

EU/EGT, 2019: 13,5 %
HU, 2019: 17,7%



2021

EU/EGT, 2021: 12,6%
HU, 2021: 16,2%

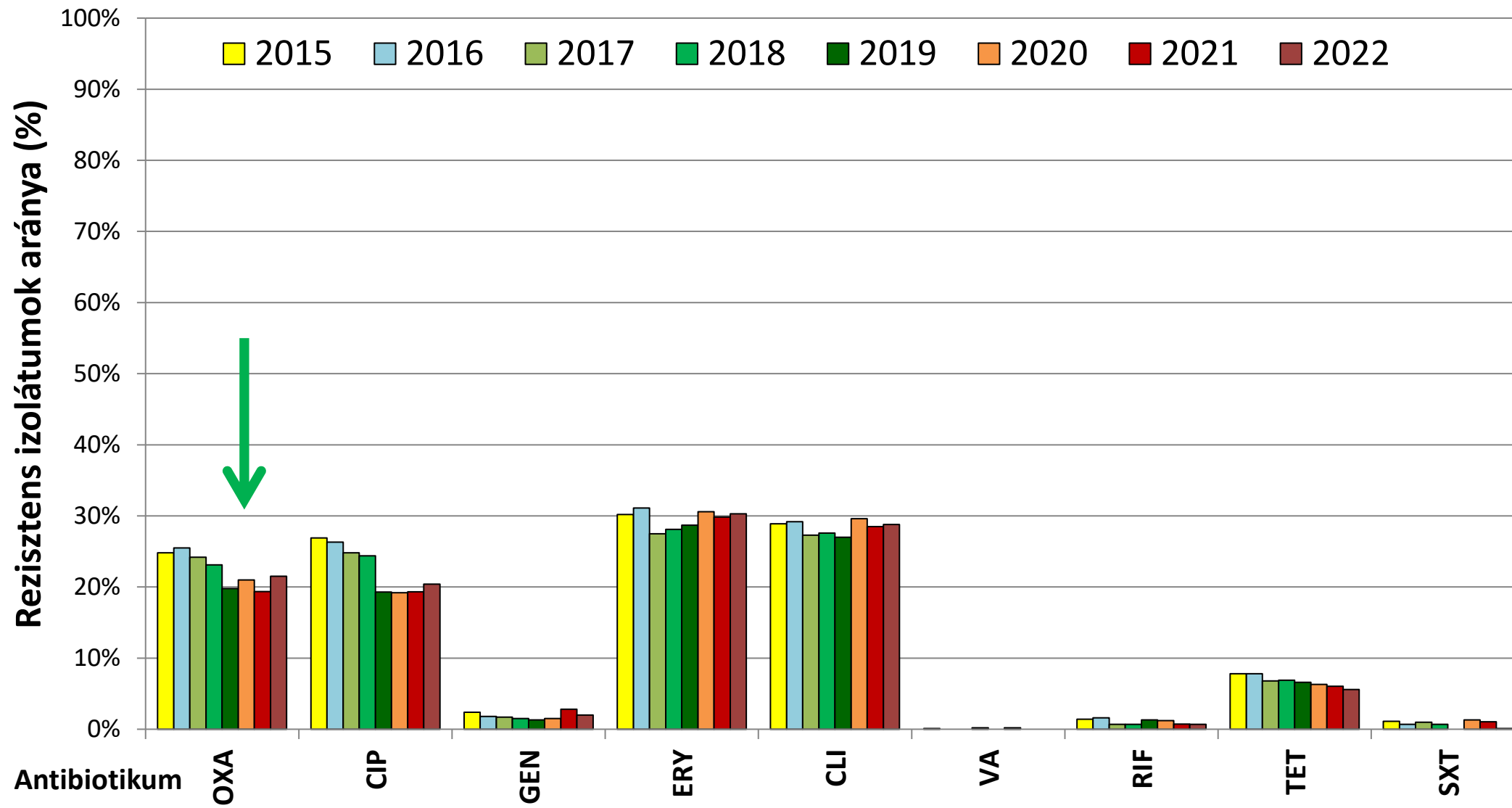


2022

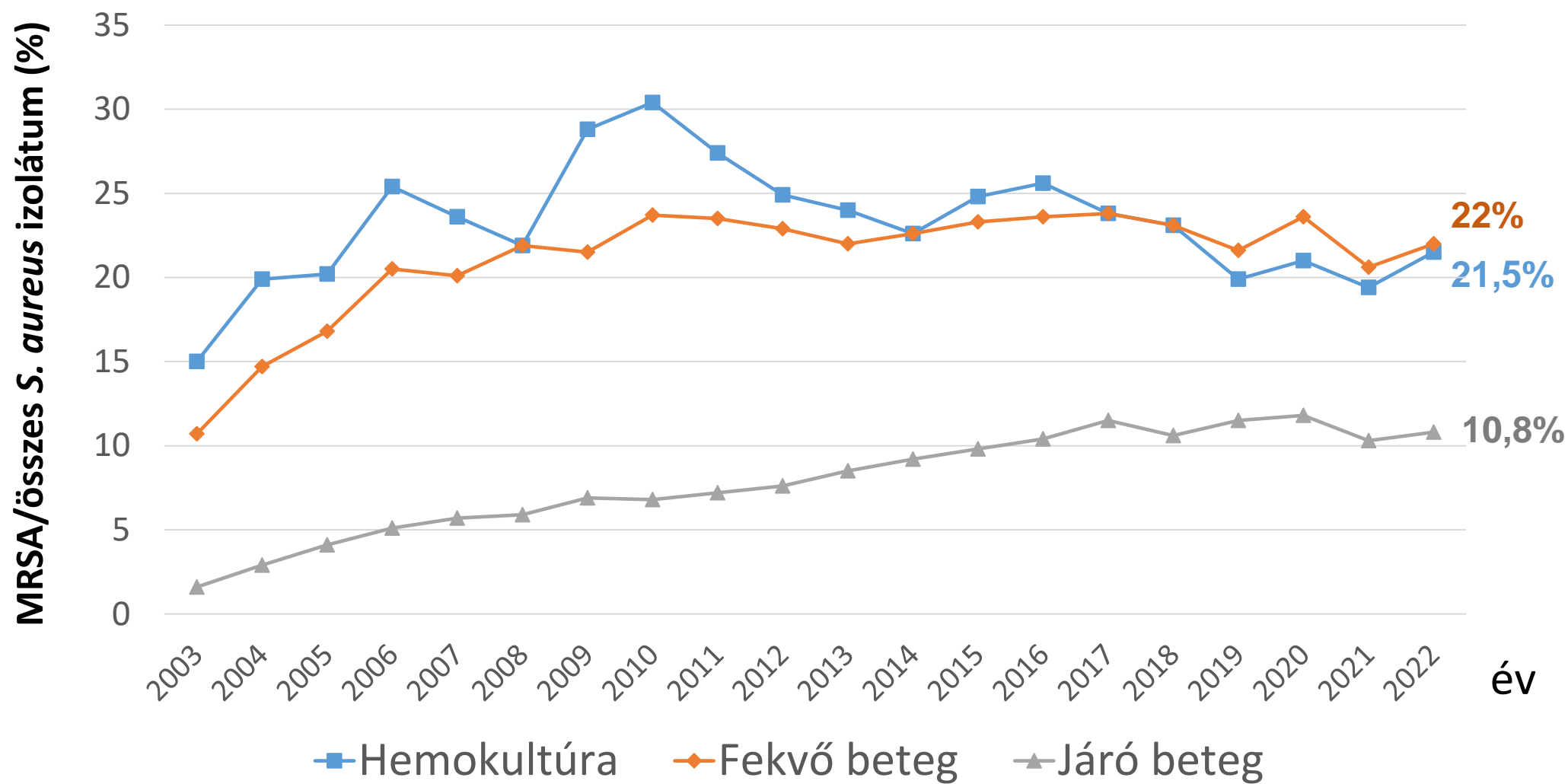
EU/EGT, 2022: 13,4%
HU, 2022: 12,7%

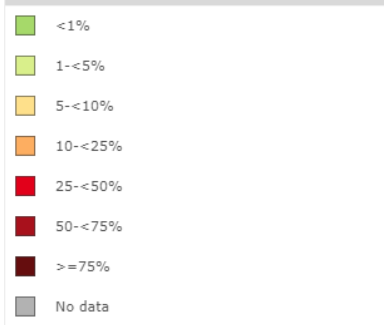


Hemokultúrából izolált *S. aureus*, NBS, 2015-2022

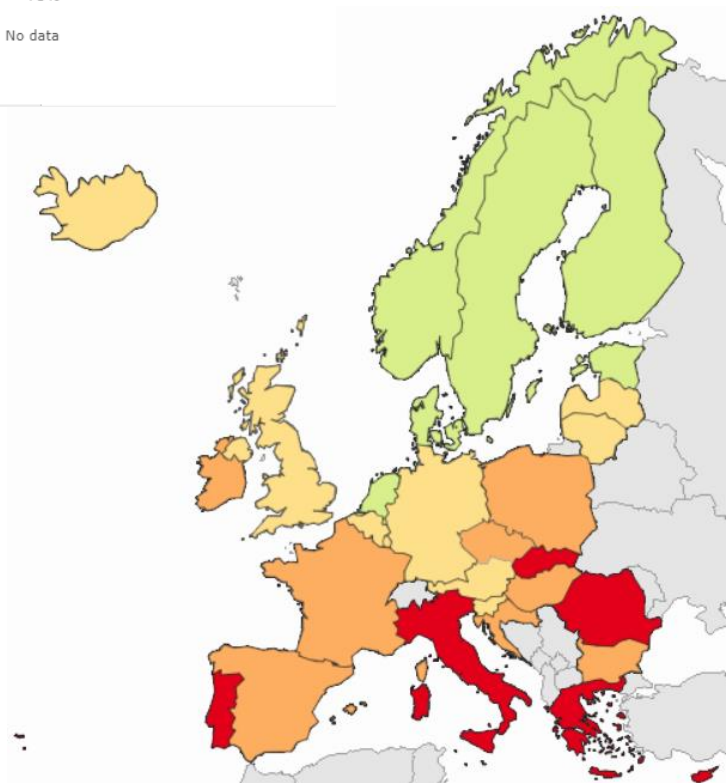


Methicillin-rezisztens *Staphylococcus aureus*, NBS, 2003-2022





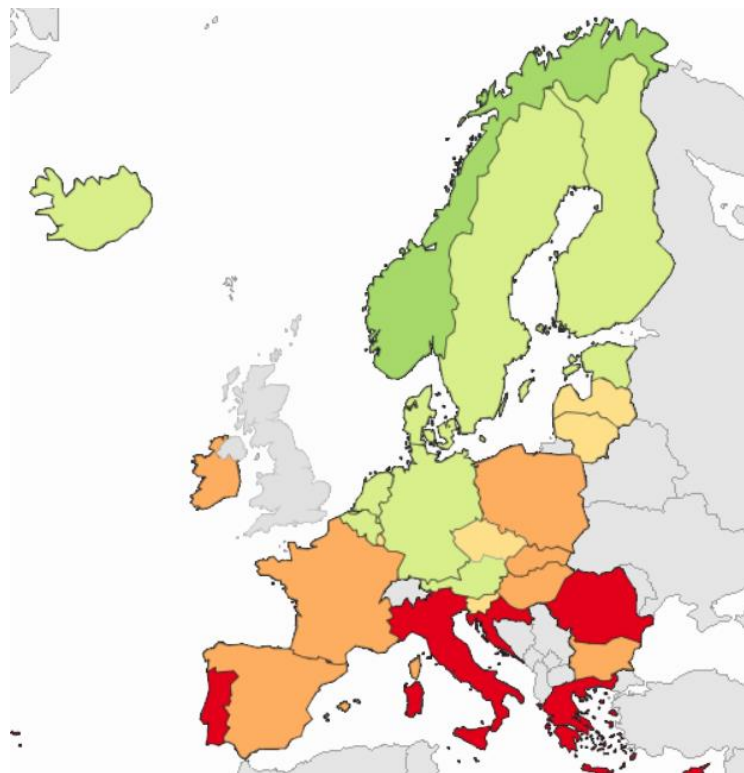
Methicillin rezisztens *S. aureus*, EARS-Net



2019

EU/EGT, 2019: 17,2%

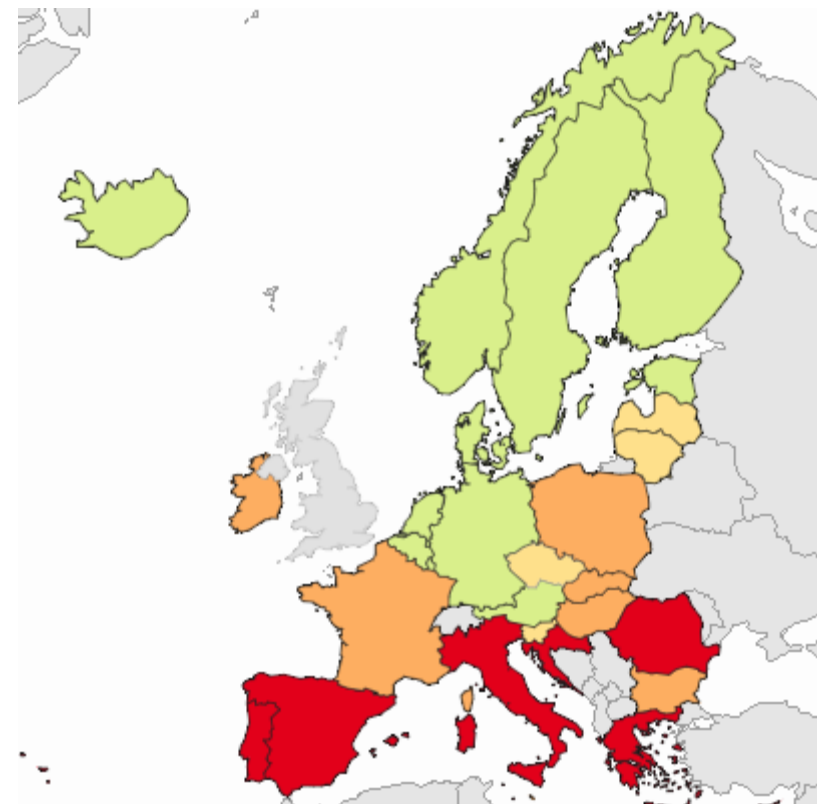
HU, 2019: 19,4%



2021

EU/EGT, 2021: 15,8%

HU, 2021: 19,3%



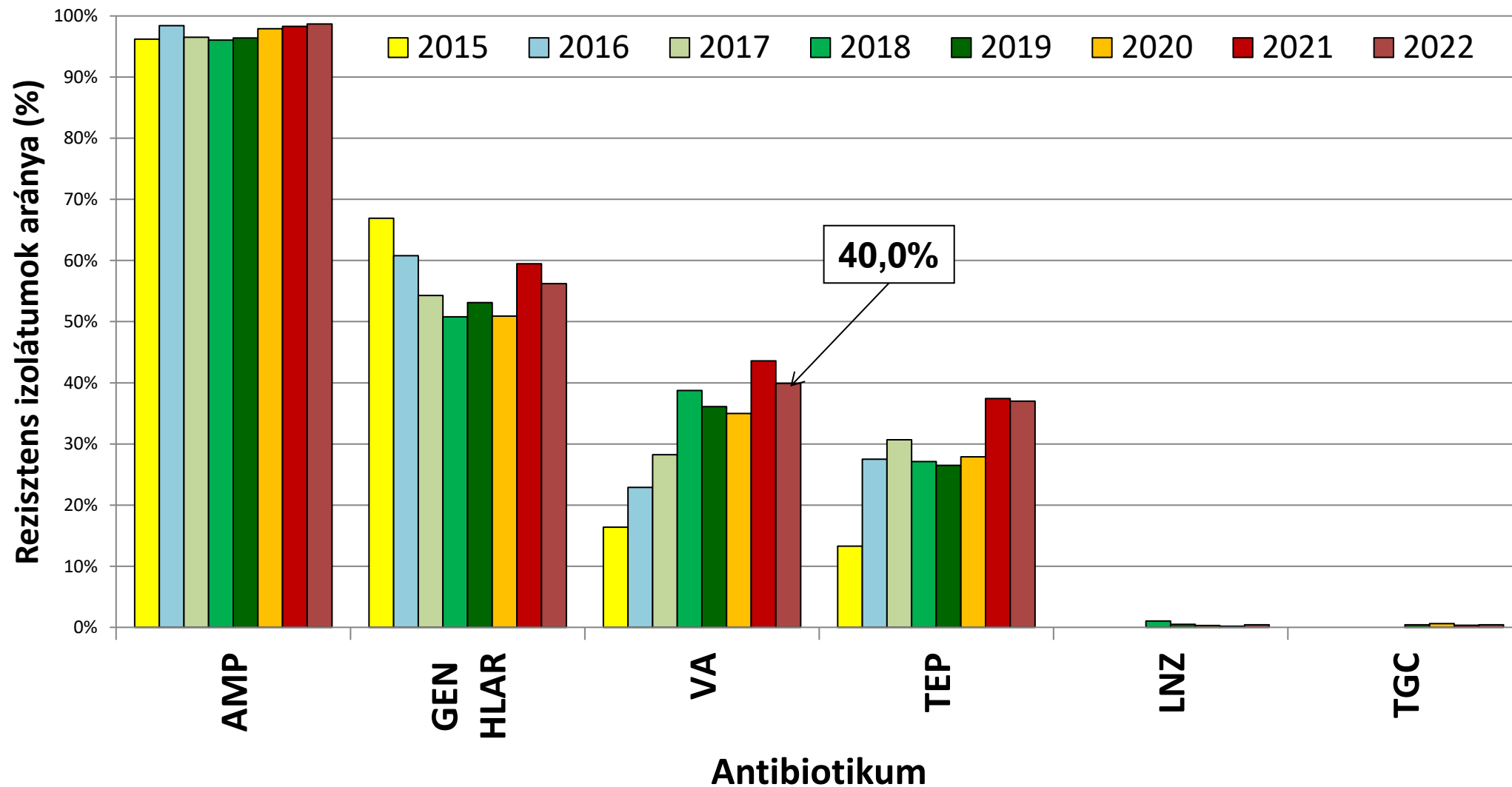
2022

EU/EGT, 2022: 15,2%

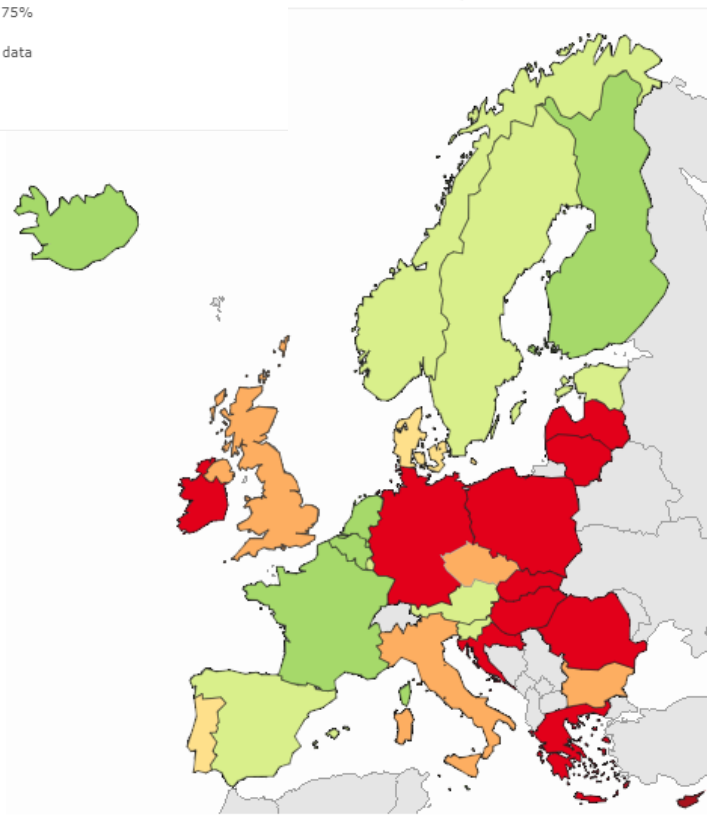
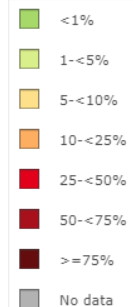
HU, 2022: 20,9%



Hemokultúrából izolált *Enterococcus faecium*, NBS, 2015-2022

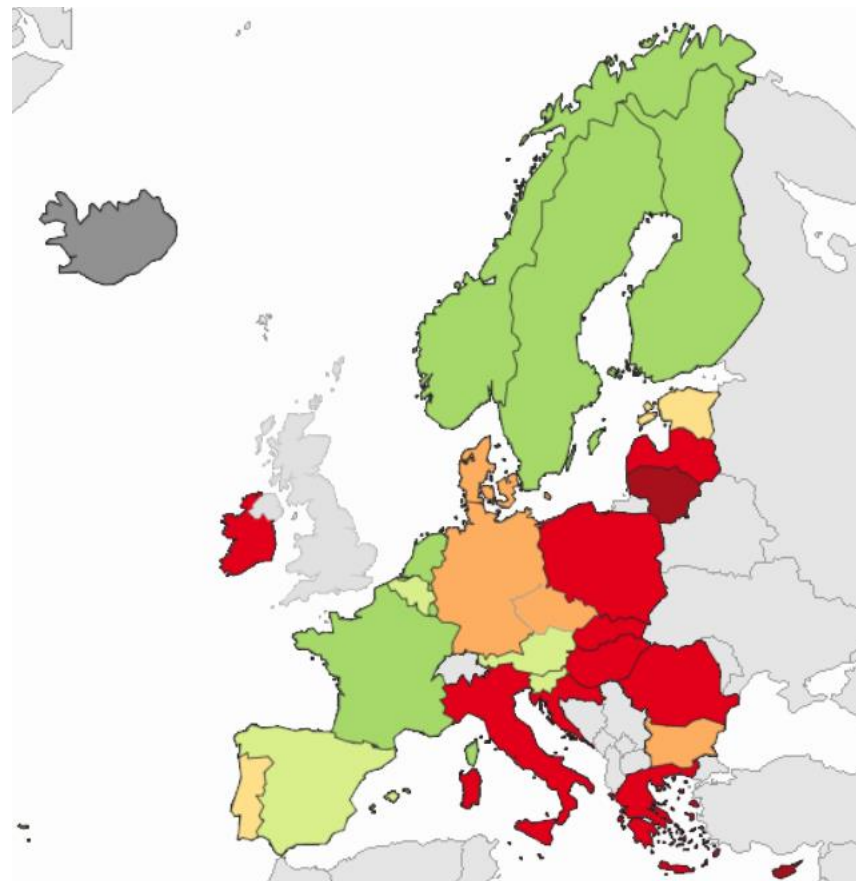


Vancomycin rezisztens *E. faecium*, EARS-Net



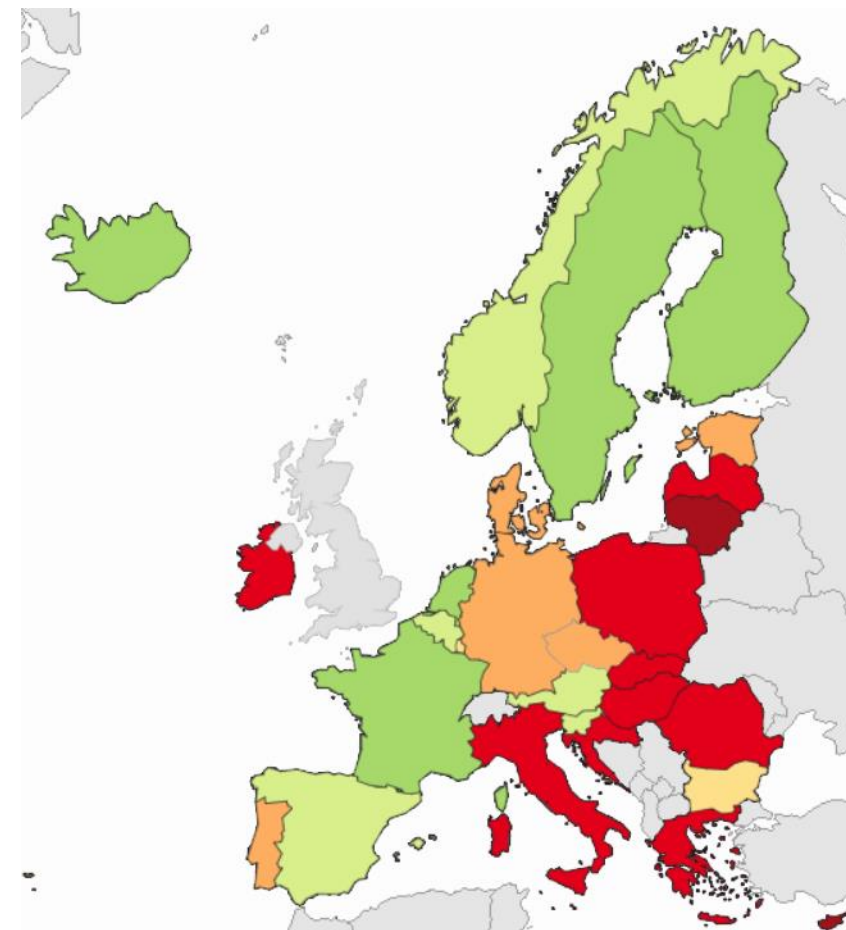
2019

EU/EGT, 2019: 18,3%
HU, 2019: 35,9%



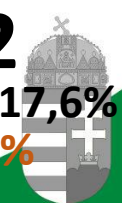
2021

EU/EGT, 2021: 17,2%
HU, 2021: 40,7%

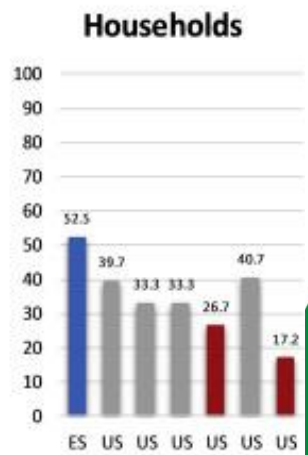
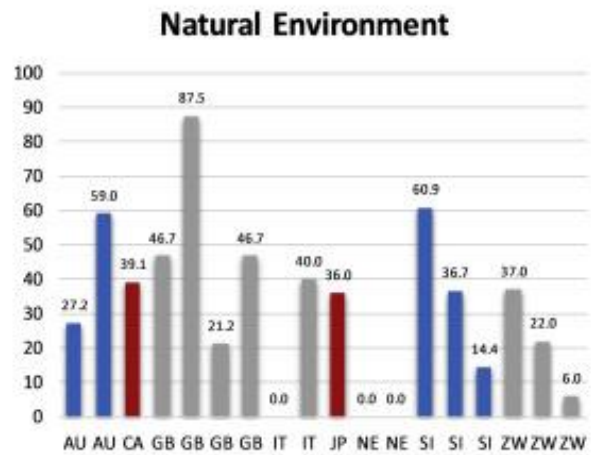
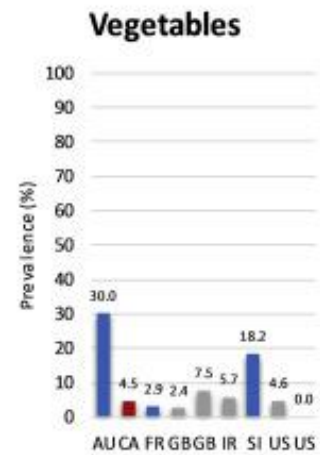
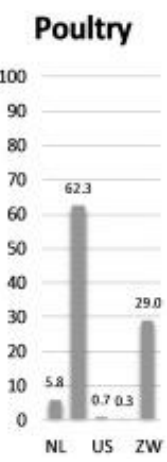
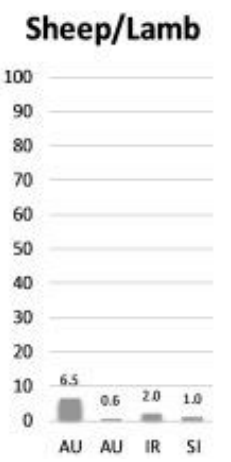
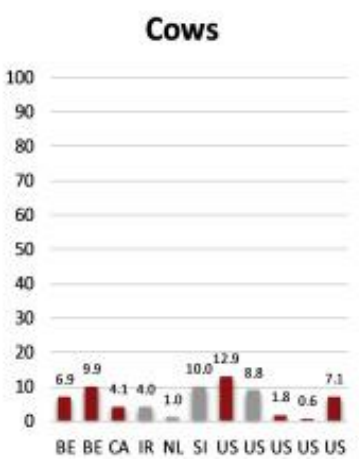
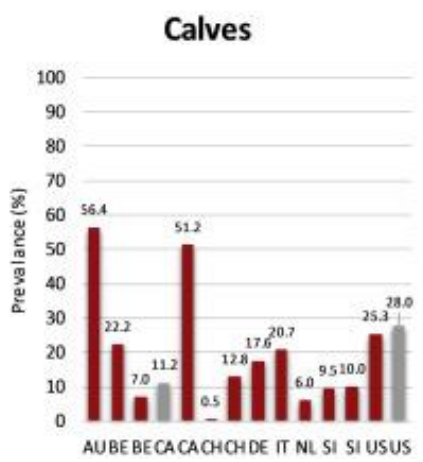
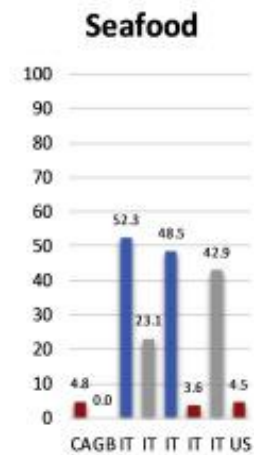
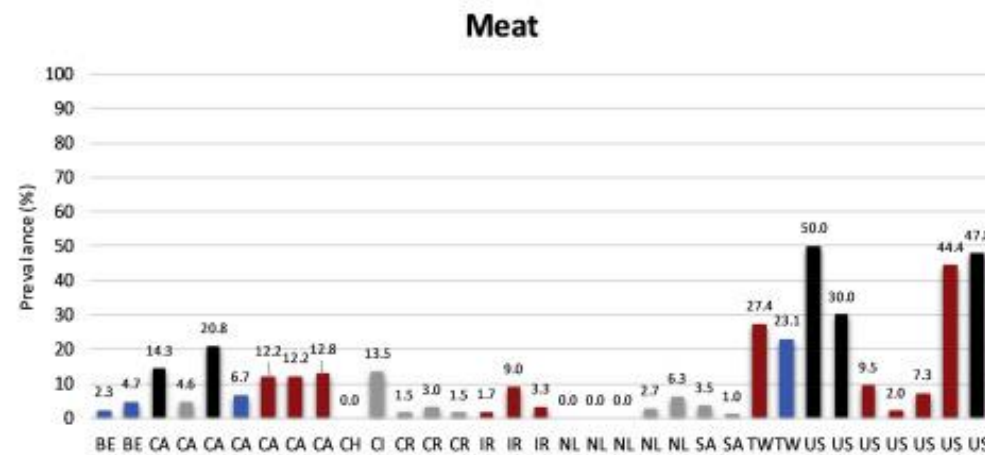
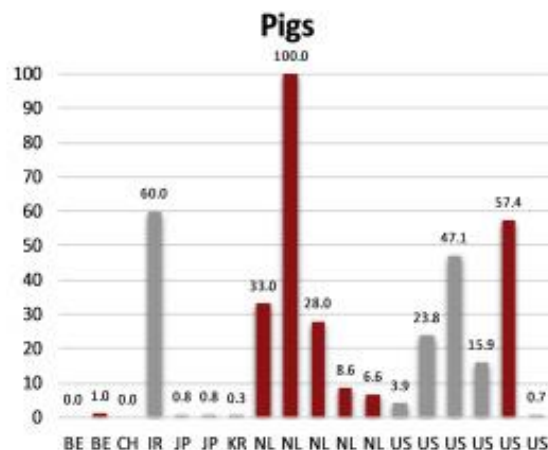
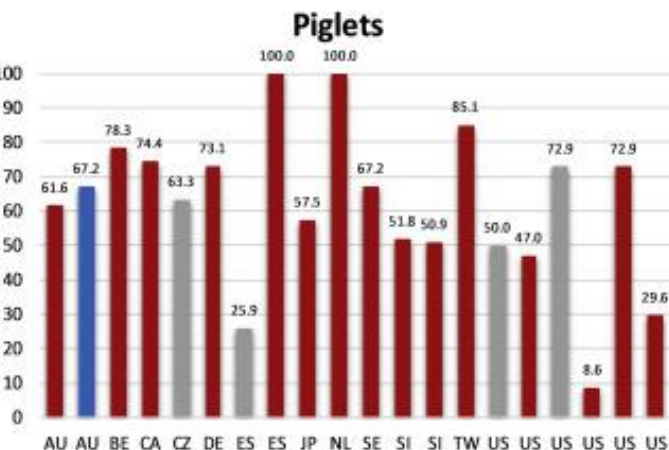


2022

EU/EGT, 2022: 17,6%
HU, 2022: 35,8%

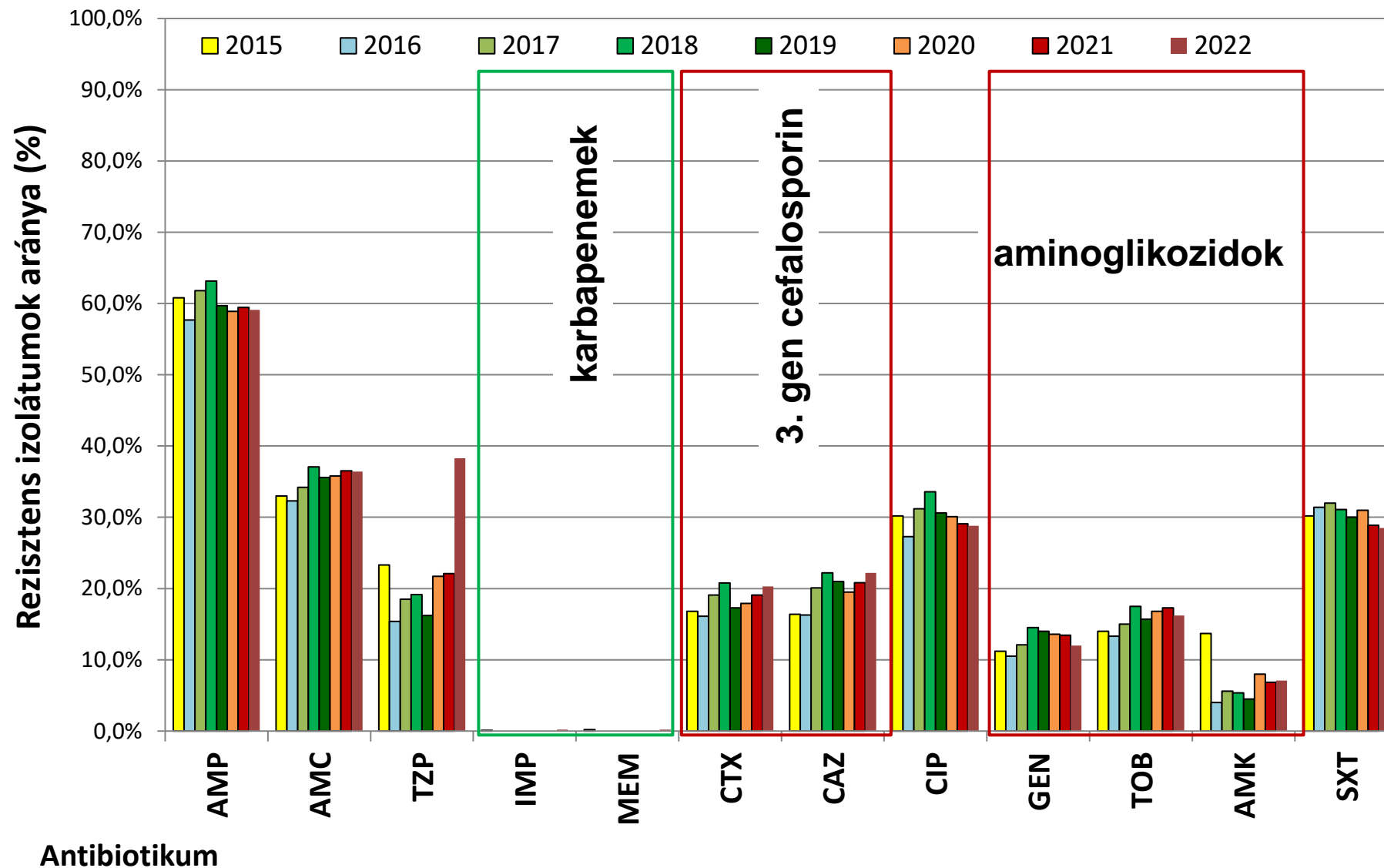


Clostridioides difficile

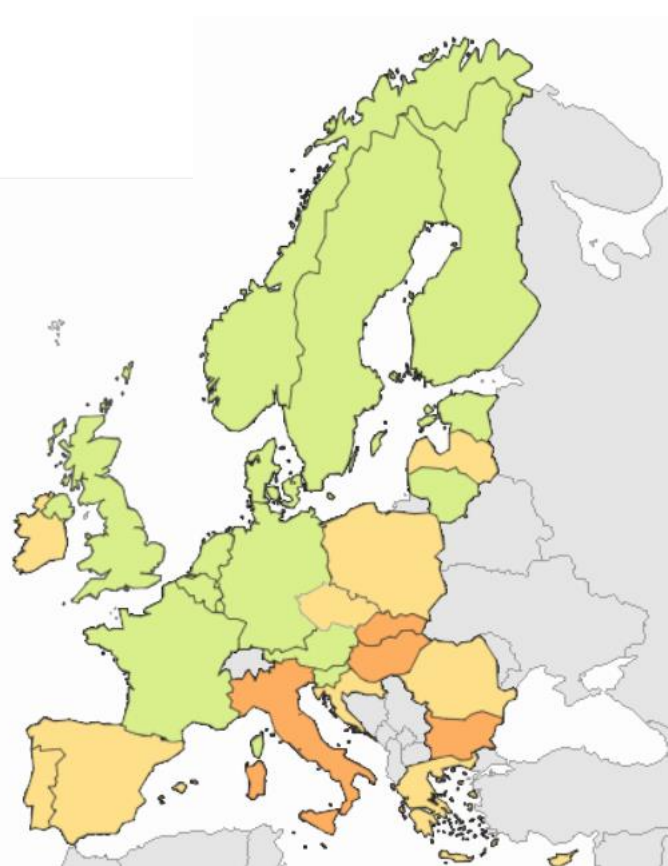
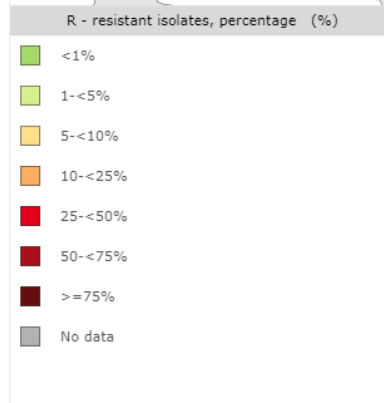


- Predominated by *C. difficile* ribotypes belonging to NAP7/toxinotype V/ST11 (078/126/127/033/288/237)
- Predominated by *C. difficile* ribotypes belonging to NAP4/toxinotype 0 (014/020)
- Predominated by *C. difficile* ribotypes belonging to NAP1/toxinotype III (027)
- Predominated by *C. difficile* ribotypes other than the above

Hemokultúrából izolált *E. coli*, NBS, 2015-2022



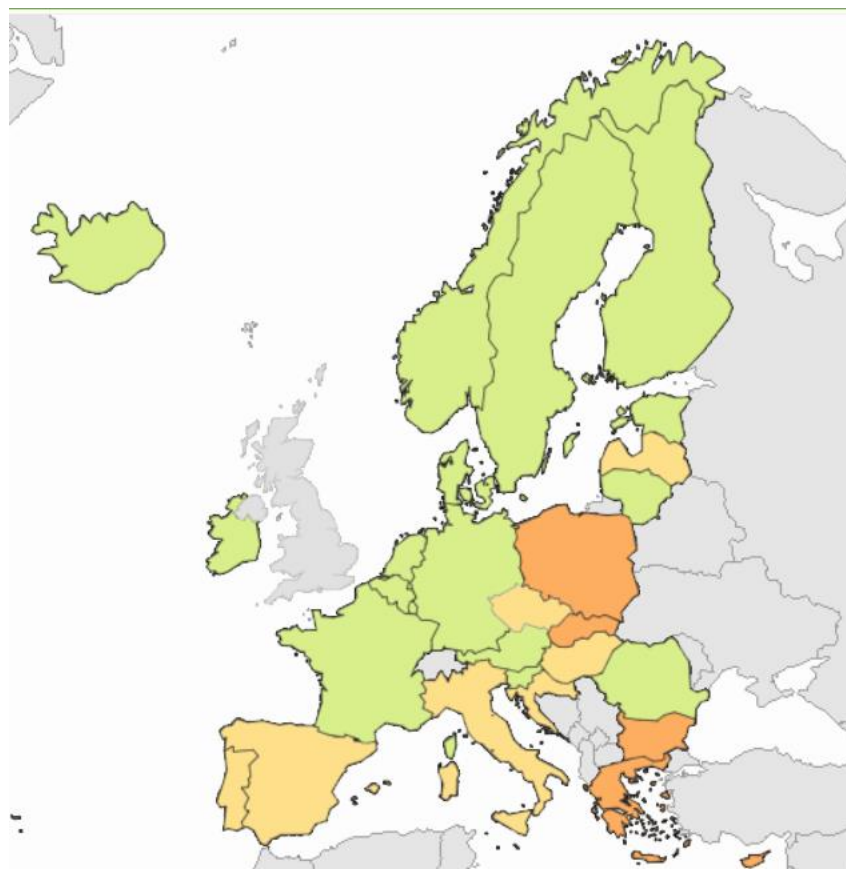
3. gen. cefalosporin, aminoglikozid és fluorokinolon rezisztens *E. coli*, EARS-Net



2019

EU/EGT, 2019: 6,1%

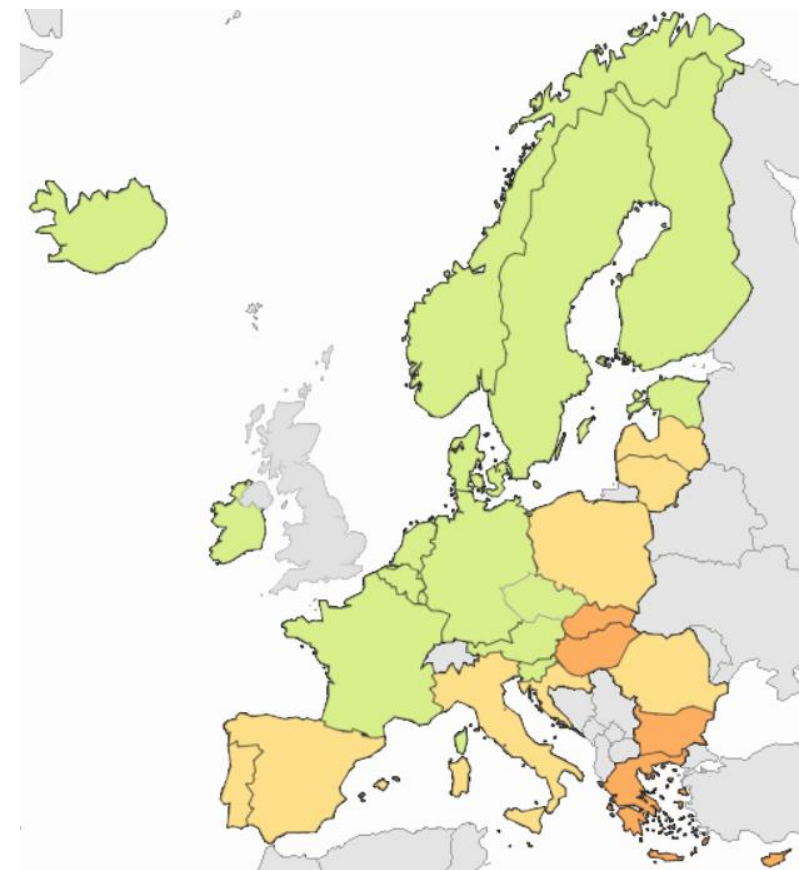
HU, 2019: 10,4%



2021

EU/EGT, 2021: 5,1%

HU, 2021: 10,0%

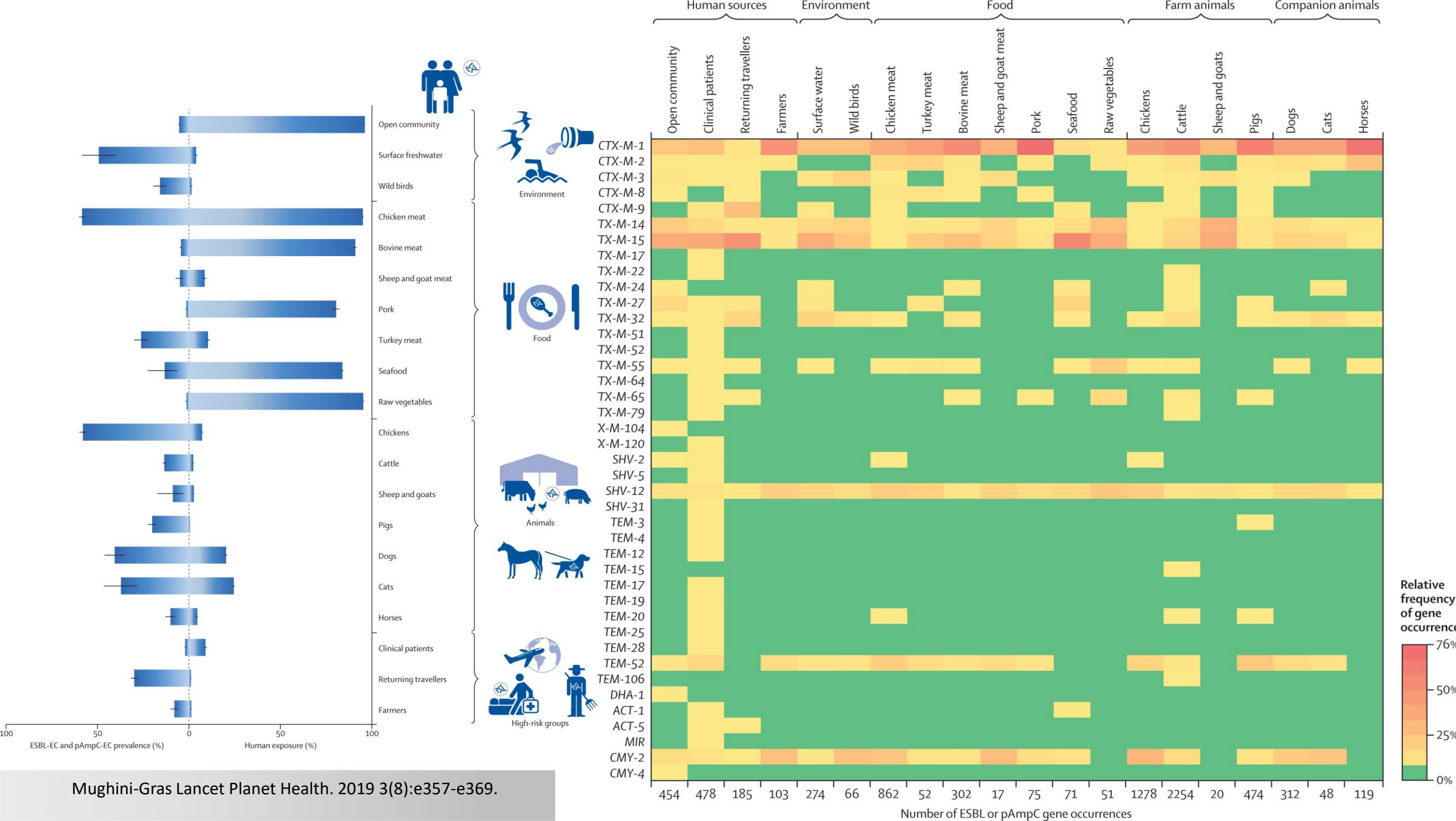


2022

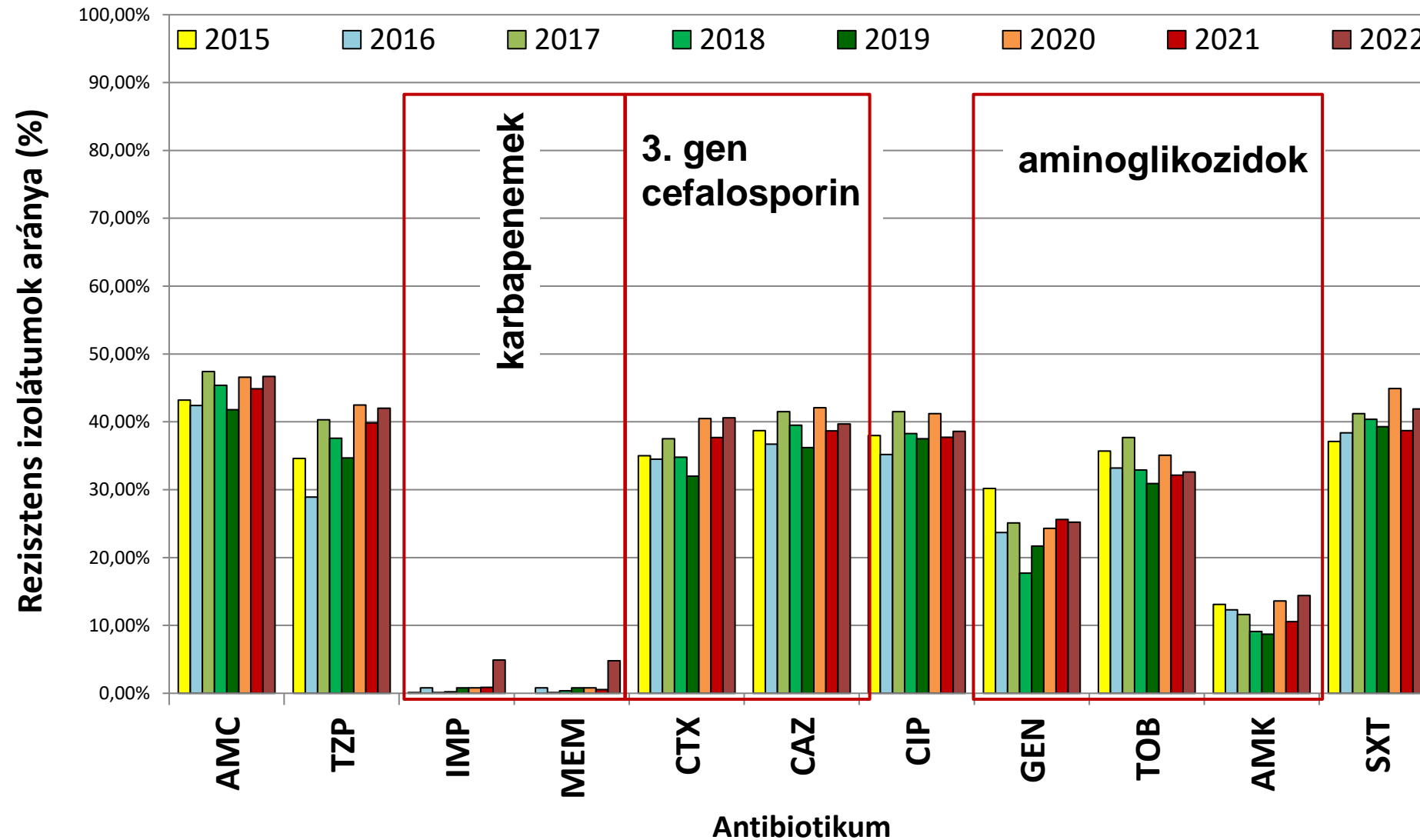
EU/EGT, 2022: 5,1%

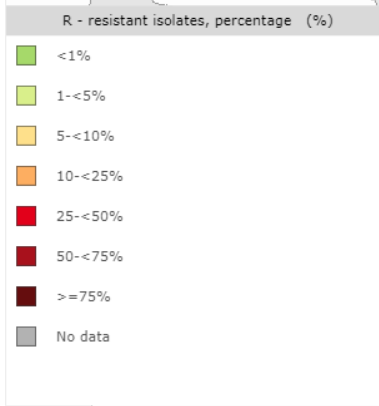
HU, 2022: 10,6%



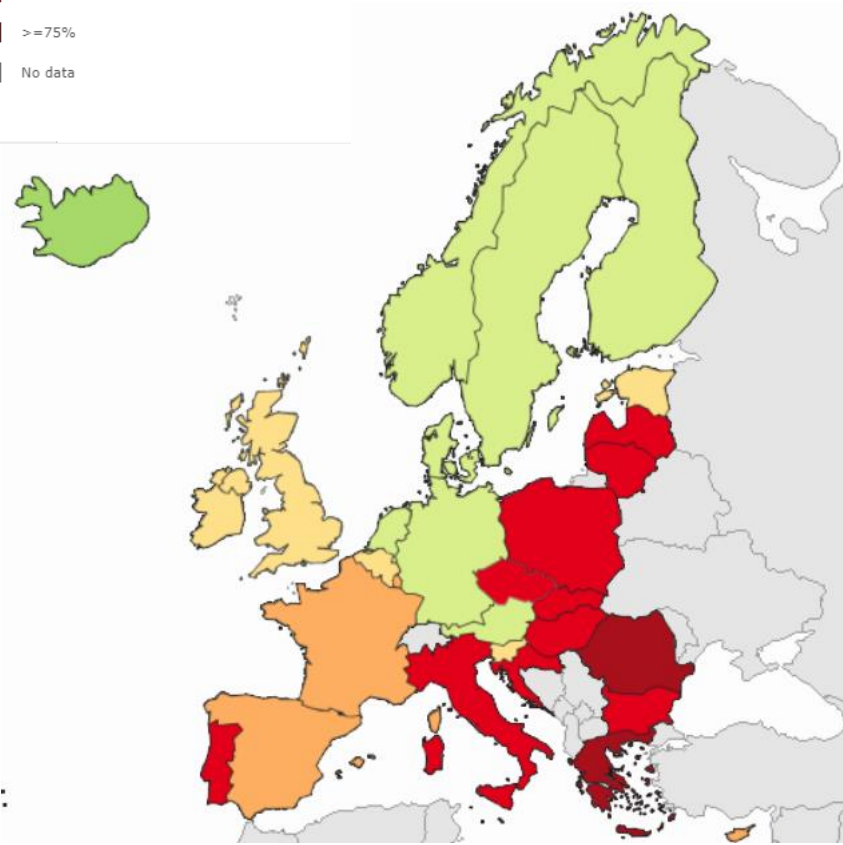


Hemokultúrából izolált *Klebsiella pneumoniae*, NBS, 2015-2022





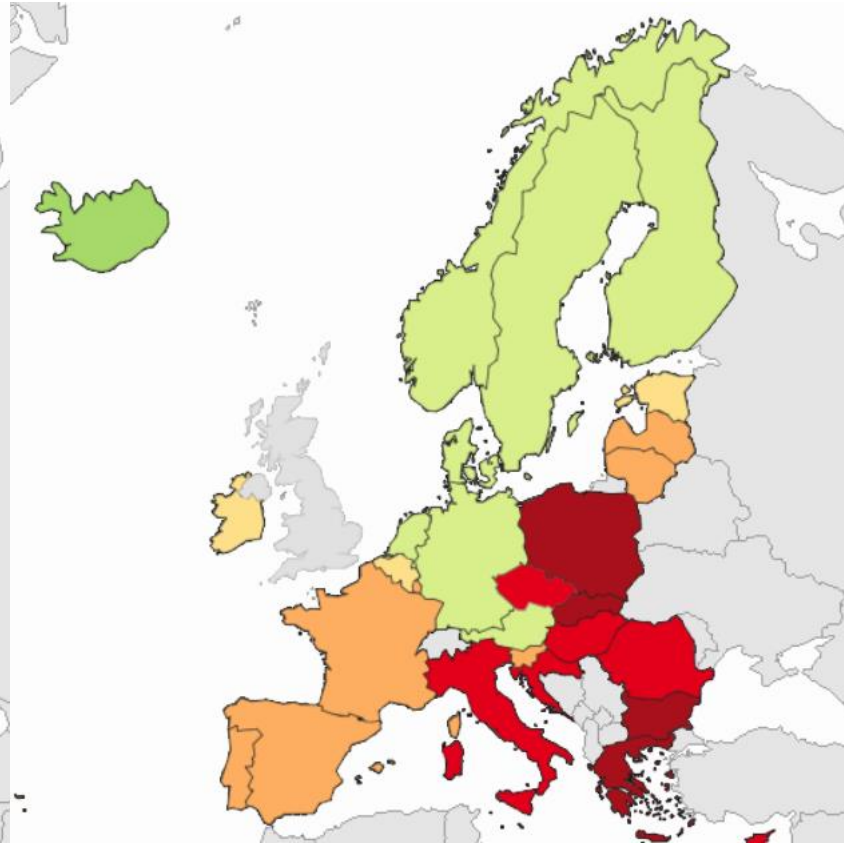
3. gen. cefalosporin, aminoglikozid és fluorokinolon rezisztens *K. pneumoniae*, EARS-Net



2019

EU/EGT, 2019: 21,5%

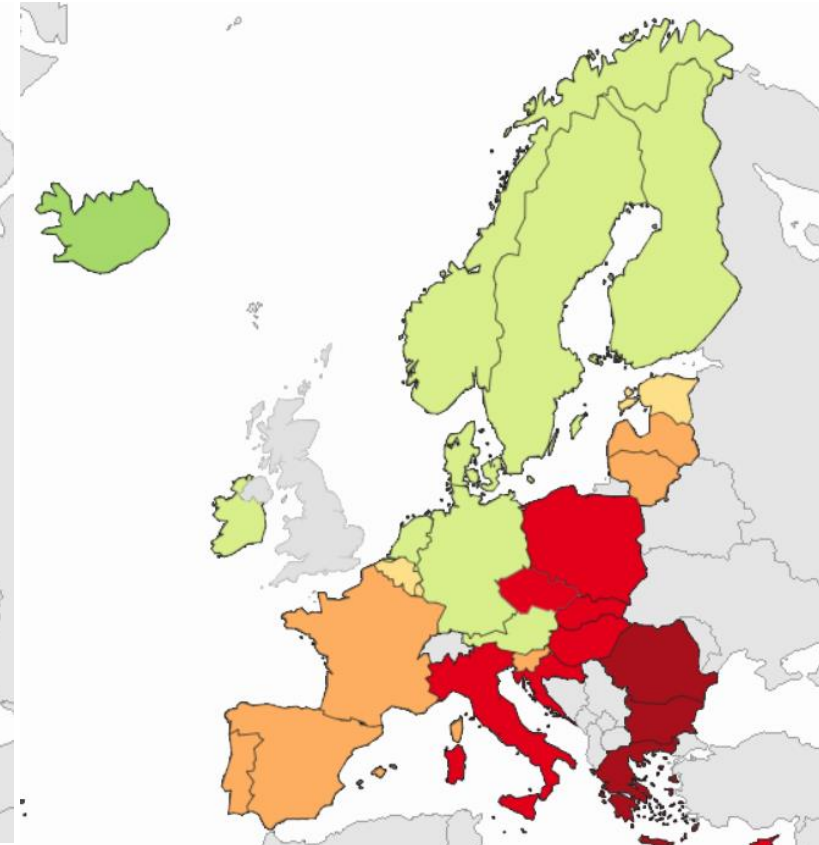
HU, 2019: 26,4%



2021

EU/EGT, 2021: 21,2%

HU, 2021: 29,2%

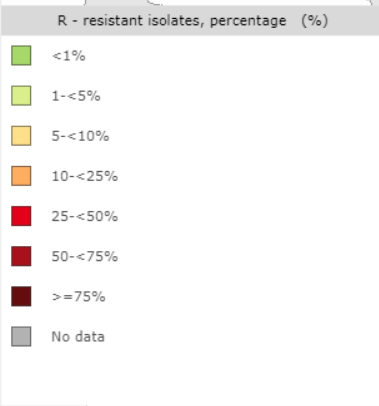


2022

EU/EGT, 2022: 20,0%

HU, 2022: 28,8%

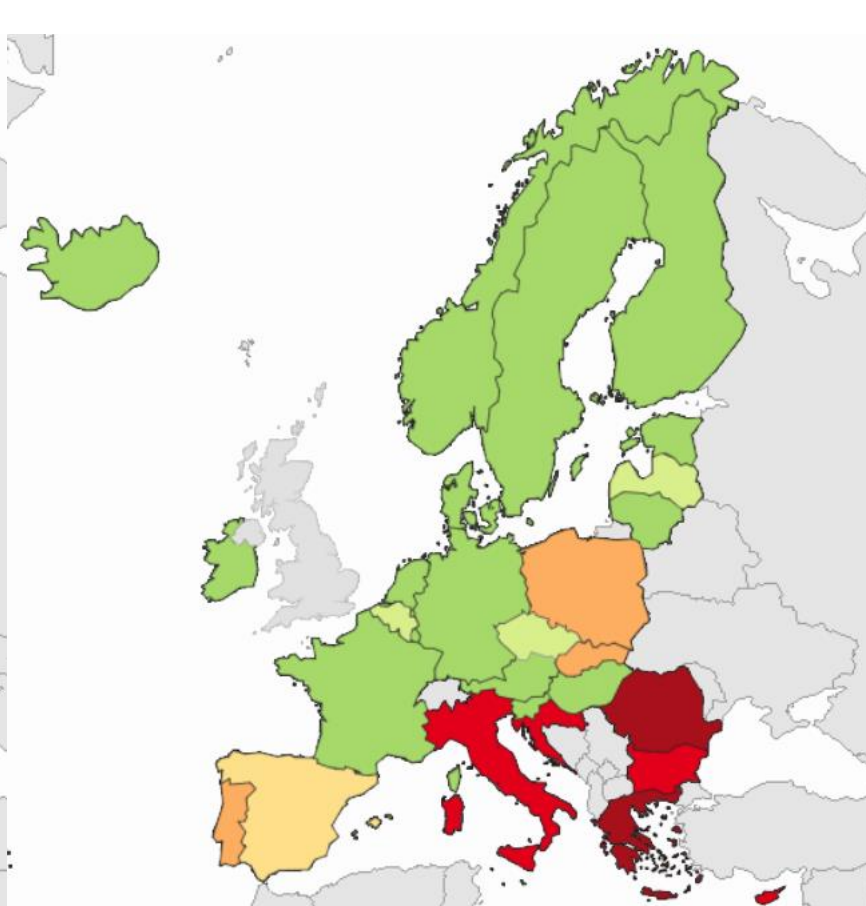




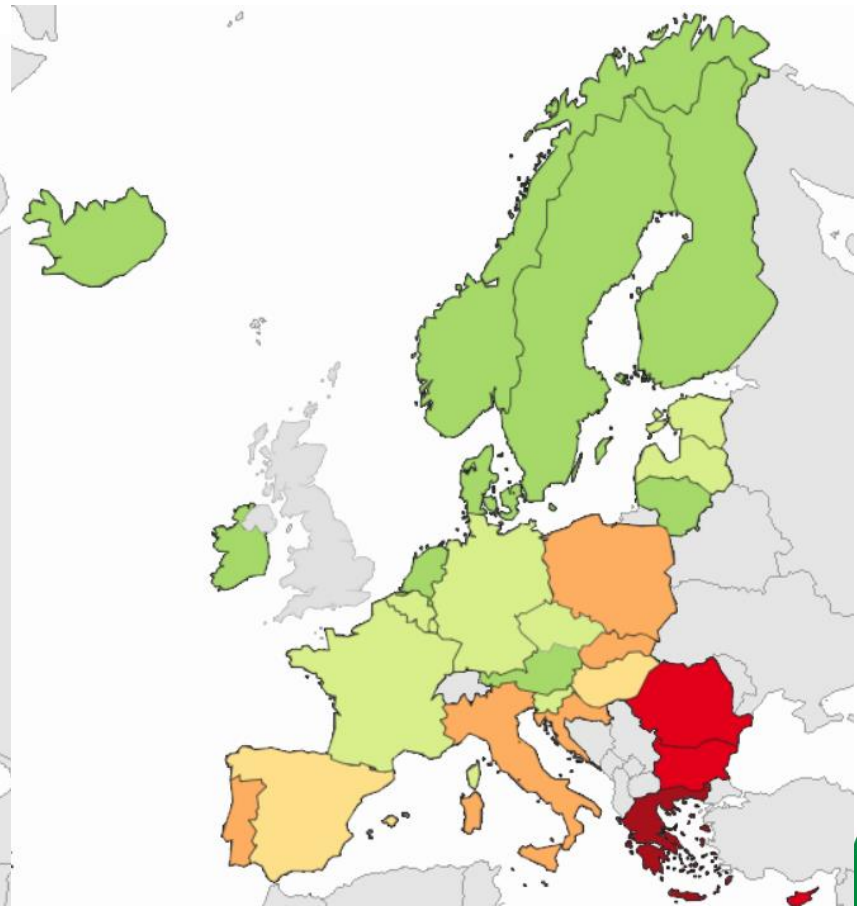
Karbapenem rezisztens *K. pneumoniae*, EARS-Net



2019
 EU/EGT, 2019: 9,0%
 HU, 2019: 0,9%



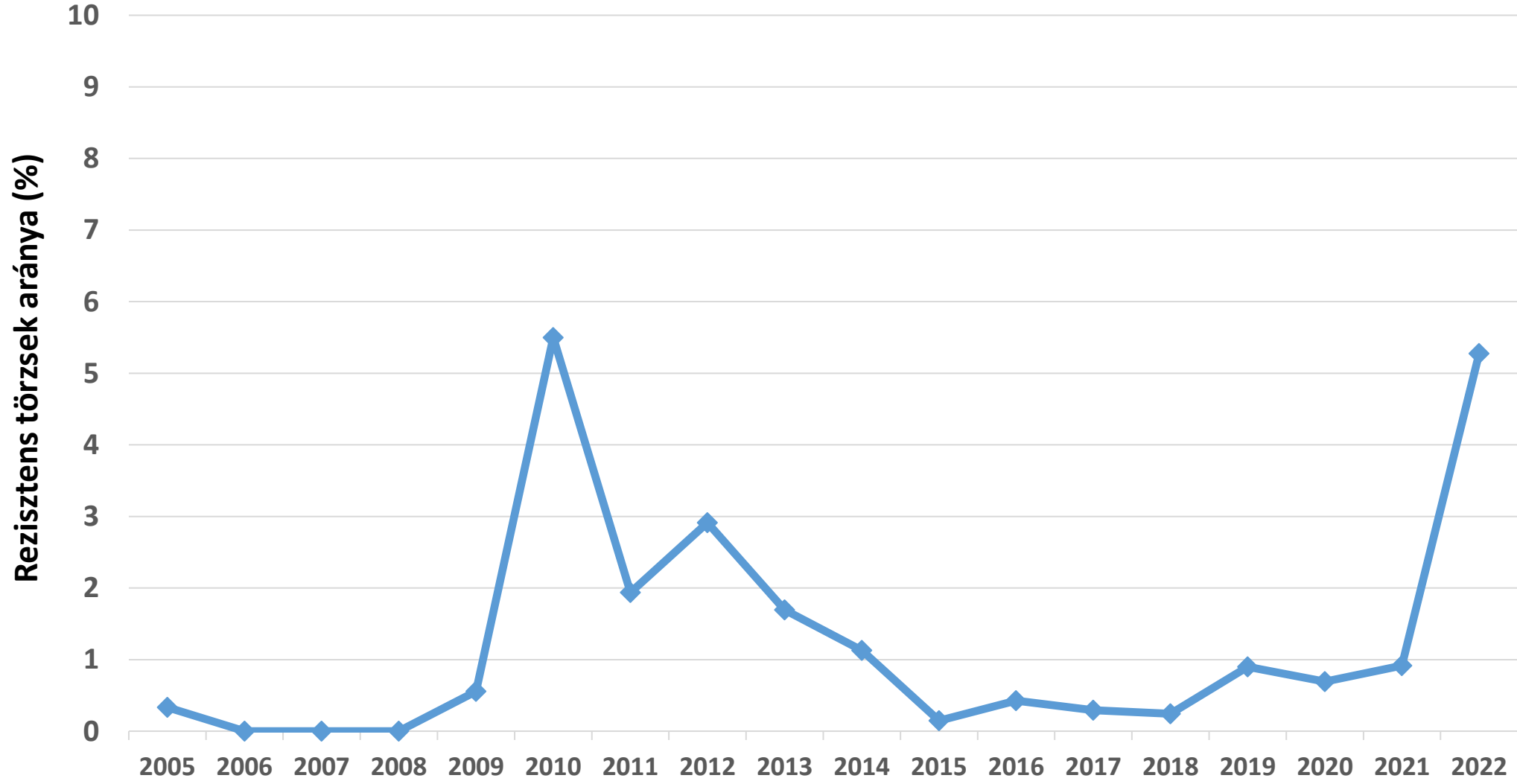
2021
 EU/EGT, 2021: 11,6%
 HU, 2021: 0,9%



2022
 EU/EGT, 2022: 10,9%
 HU, 2022: 5,3%

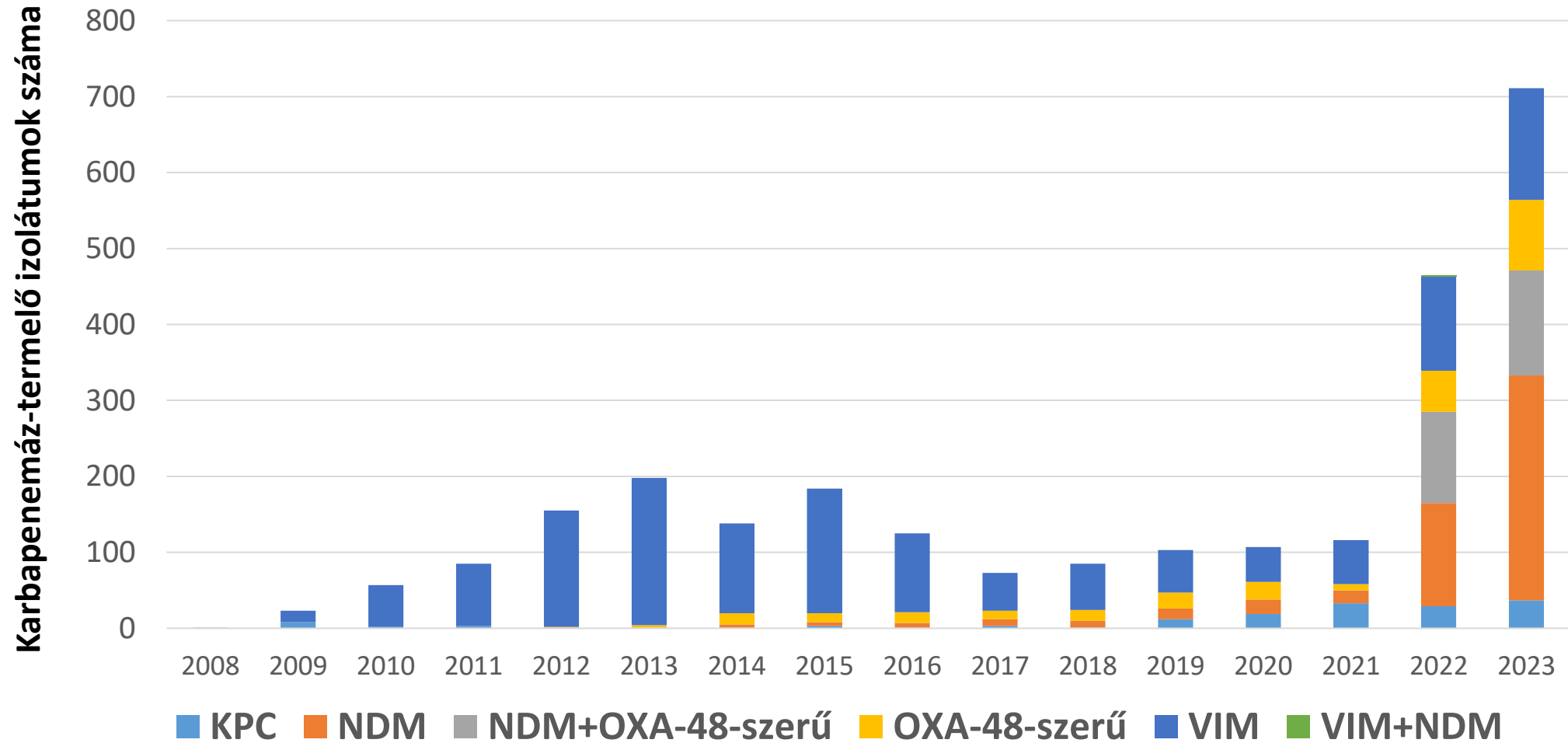


Hemokultúrából izolált *Klebsiella pneumoniae* karbapenem rezisztenciája, NBS, 2005-2022



Év

Hazai karbapenemáz-termelő *Enterobacterales* izolátumok, 2008-2023, karbapenemázok szerint (n=2625)



„Farmtól a fogyasztóig” vizsgálatok

- Egy ól követése \Rightarrow 5 rotáció (2006. március-december) (A1-A5)
- Összevetés két másik telep egy-egy óljával (2006 december) (B és C)
- napos () 1 hetes () 3 hetes 6 hetes vágóhíd húsbolt



Mekónium,
bélsár,
(vakbél)

bélsár

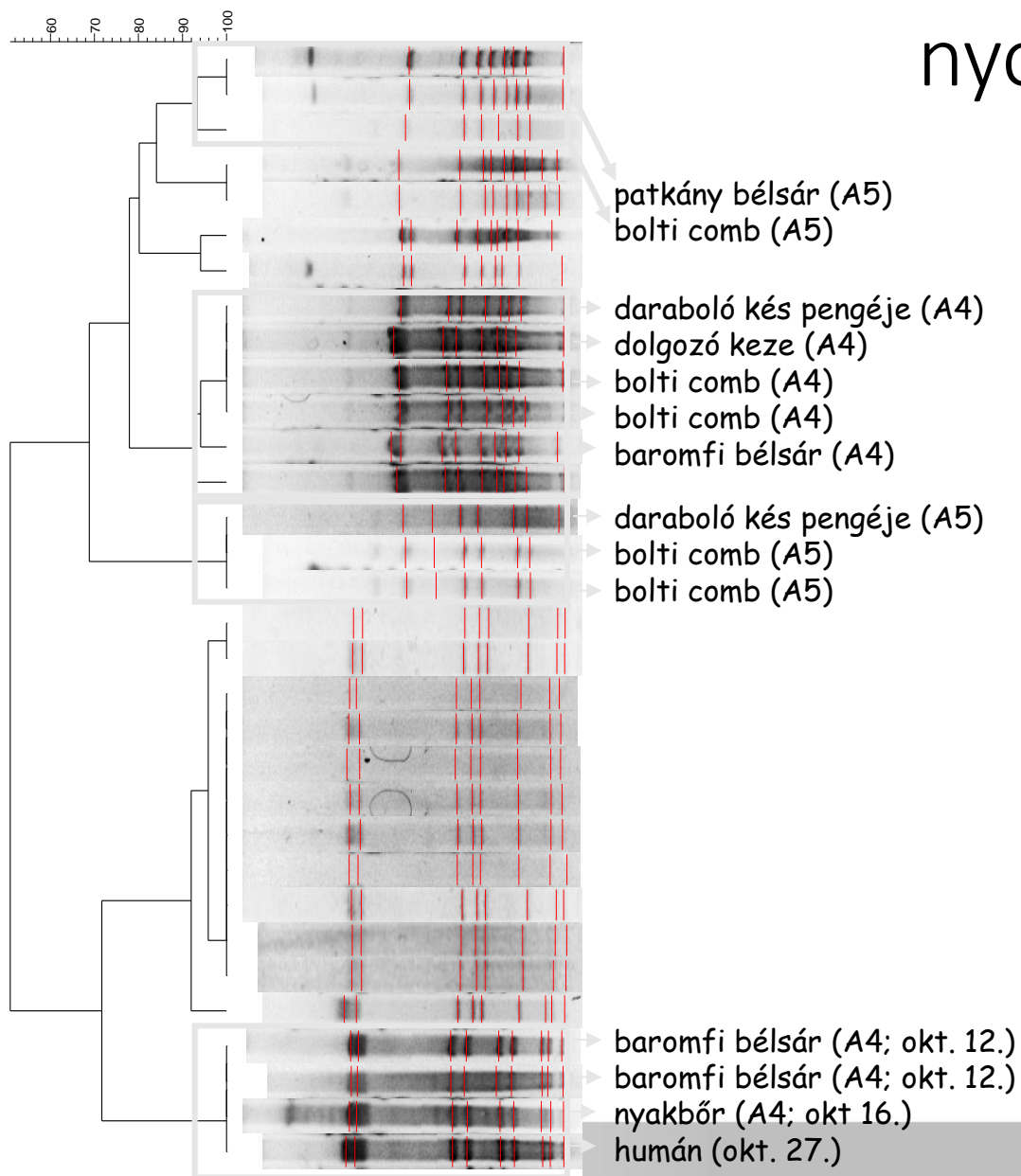
higiénia

húsminta

- tenyésztés
- ERIC-PCR
- fla-tipizálás (flagellin gén RFLP)
- PFGE (SmaI, KpnI)

GVOP AKF 0472





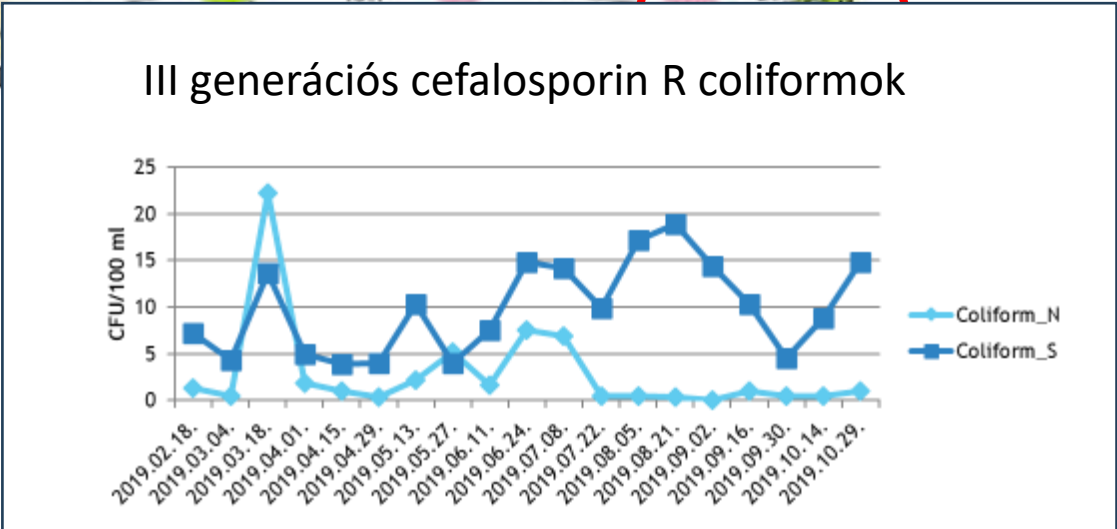
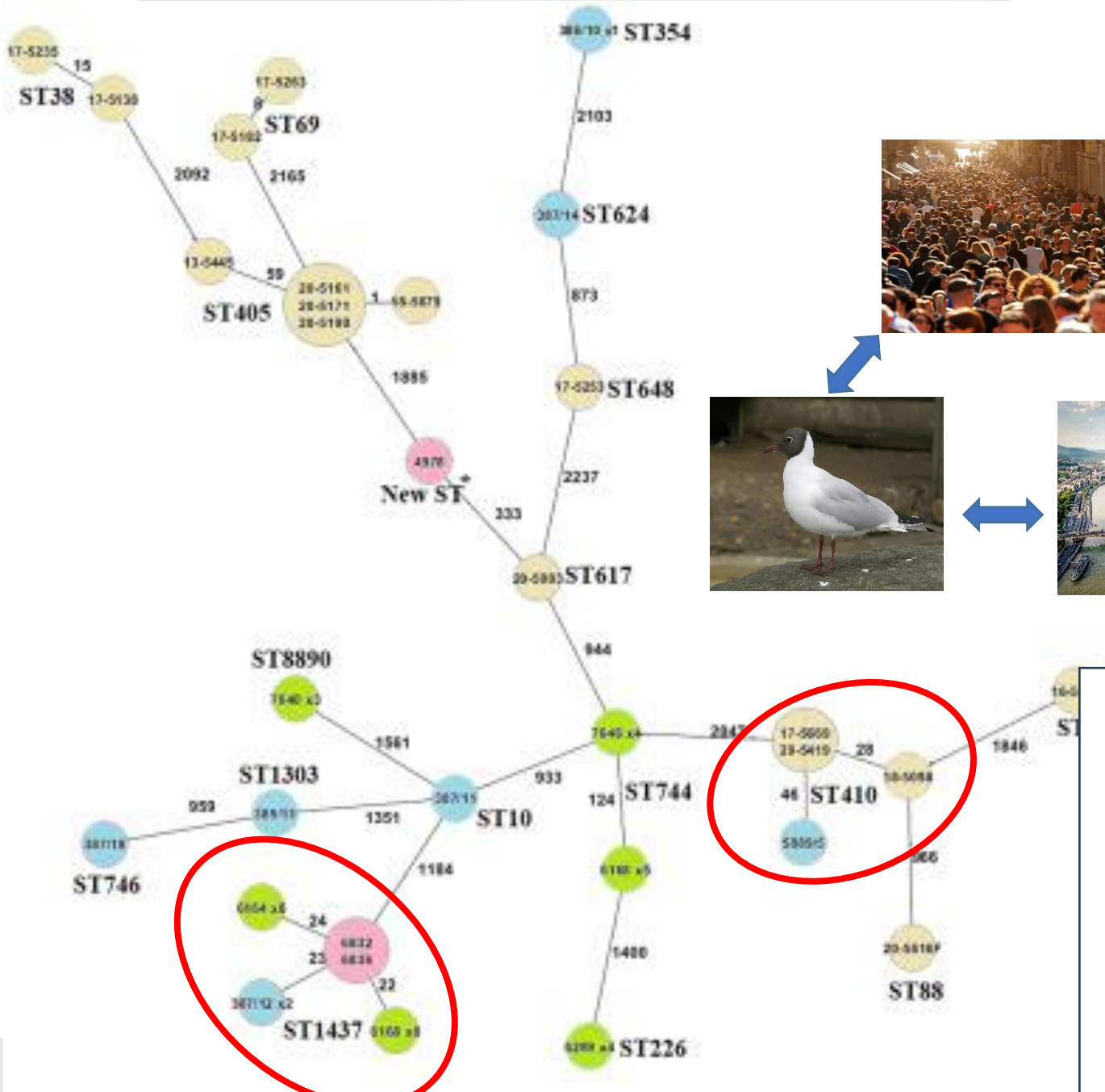
A Campylobacter nyomkövetés eredményei

- PFGE-vel kapcsolatot mutattunk ki
 - a telepen fogott patkány
 - és a boltban vett hús;
 - a csirkebél­sár,
 - a vágóhídi környezet,
 - és a boltban vett hús;
 - a csirkebél­sár,
 - a vágóhídi nyakbőr,
 - és humán megbetegedés **FQ rezisztens** izolátumai között.

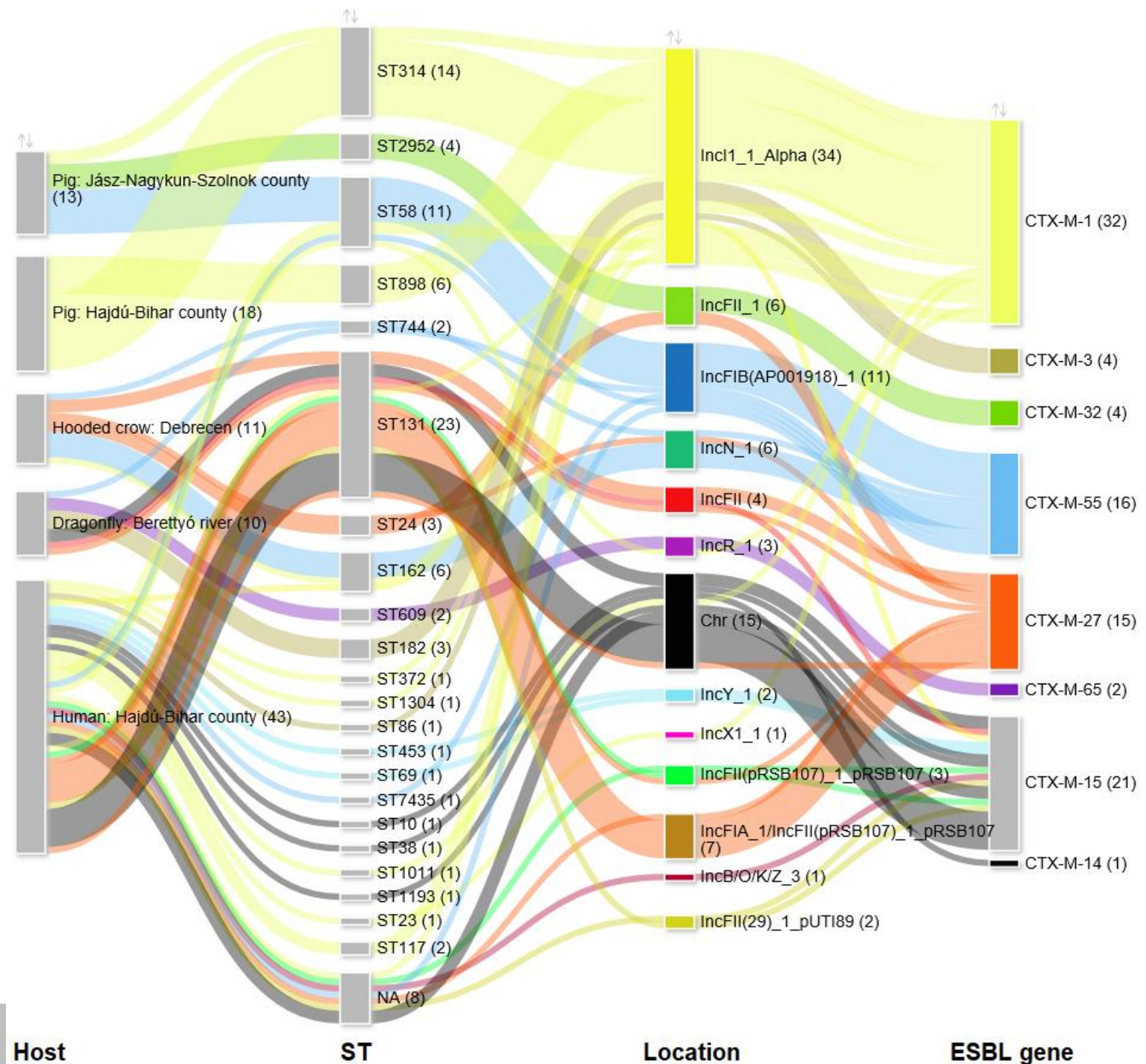


Dankasirály (*Chroicocephalus ridibundus*)

- Gall (2019)
- Gall (2020)
- Danube
- Human



Plazmidok





Egészségügyi Ellátórendszer
Szakmai Módszertani Fejlesztése
EFOP-1.8.0-VEKOP-17-2017-00001

Infekciókontroll-és-AMR-szakpolitikai
program, az „Egy-Egészség” megközelítés
alapján egységben az állatgyógyászati
készítményekkel

Részletes változat

Alprojekt/munkacsoport megnevezése:

„D”-BETEGBIZTONSÁG/-

Rendszerszintű betegbiztonsági problémák kezelése-D.III.2.

Eredménytermék készítésének dátuma:

2019.06.03.

Készítette az EFOP-1.8.0-VEKOP-17-2017-000

„Egészségügyi-ellátórendszer-szakmai-módszertani-fejlesztés”

SZÉCHENYI



Európai Unió
Európai Szociális
Alap

„D” BETEGBIZTONSÁG alprojekt Rendszerszintű betegbiztonsági problémák kezelése
D.II.1.3 munkacsoportja
A projekt a Széchenyi 2020 program keretében valósul meg.

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Köszönöm a megtisztelő figyelmet!



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